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UNIVERSITY OF CALIFORNIA, SANTA BARBARA

Published at Santa Barbara, California 93106

Volume 13, Number 8, July, 1973

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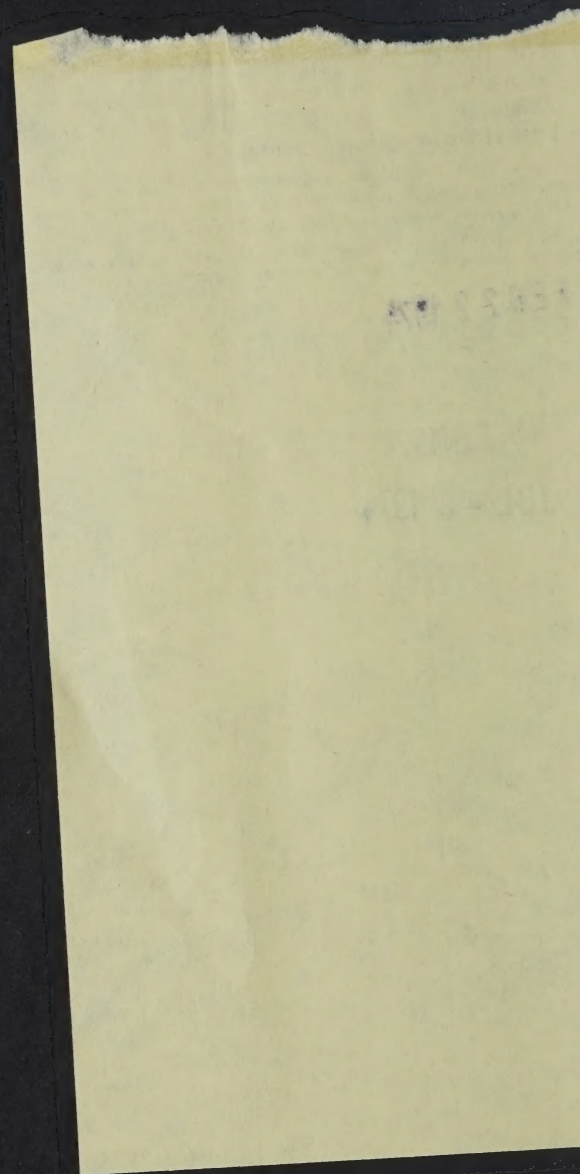
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UCSB

University of California, Santa Barbara

1973-74

General Catalog Issue

Fall, Winter, Spring Quarters

July, 1973

**Price: One Dollar
(\$1.20 by mail)**

An Adventure of the Mind and Spirit

Education is not an absolute good, prepared and packaged for delivery in standard sizes. Our programs are, therefore, designed to appeal to more and different minds, differently prepared, coming from different milieus and bringing different expectations with them to this exciting academic community.

To those who come, we offer an adventure of the mind and spirit, hoping to kindle or sustain your interest in your own self-fulfillment and to help you to develop certain habits of mind so that you may approach moral issues with respect for the complexities of reality. We expect to nourish your spirit and your creativity as well.

If we can achieve these ends, perhaps you will depart with a sense of true love, compassion and humane feeling both for your fellowmen and for this university.

VERNON I. CHEADLE
Chancellor

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Calendar*, 1973-74

	Fall '73	Winter '74	Spring '74
Opening dates for filing applications for admission to undergraduate status to be filed with the Admissions Office.	Nov. 1 1972 Thurs.	July 1, 1973, Sunday	Oct. 1, 1973, Monday
Opening dates for intercampus transfer.		July 1, 1973, Sunday	Oct. 1, 1973, Monday
Final date for applications and credentials for admission to graduate status to be filed with the Dean of the Graduate Division.	Aug. 1, 1973, Wednesday	Nov. 1, 1973, Thursday	Feb. 1, 1974, Friday
Last day to apply for reinstatement.	Aug. 17, Friday	Nov. 21 Wednesday	Feb. 15, Friday
Last day to make application for readmission to be filed with the Registrar's Office by students who have been absent two quarters or more (for this purpose Summer Session counts as a quarter) or who withdrew within the last quarter in attendance.	Aug. 24, Friday	Nov. 30, Friday	Feb. 25, Monday
Last day to pay fees to hold space in classes reserved through pre-enrollment. Fees must be in the Cashier's Office before 4:00 p.m.	Sept. 5 Wednesday	Dec. 17 Monday	Mar. 13 Wednesday
Quarter begins.	Sept. 17, Monday	Jan. 3, Thursday	Mar. 28, Thursday
Registration, Counseling, and Testing.	Sept. 17, Monday thru Sept. 21, Friday	Jan. 3, Thursday thru Jan. 4, Friday	Mar. 28, Thurs- day thru Mar. 29, Friday
Instruction begins.	Sept. 24, Monday	Jan. 7, Monday	Apr. 1, Monday
Last day to register.	Oct. 5, Friday	Jan. 18, Friday	April 12, Friday
Instruction ends.	Nov. 30, Friday	Mar. 15, Friday	June 7, Friday
Final Exams.	Dec. 3, Monday thru Dec. 8, Saturday	Mar. 18, Monday thru Mar. 23, Saturday	June 10, Mon- day thru June 15, Saturday
Quarter ends.	Dec. 8, Saturday	Mar. 23, Saturday	June 15, Saturday
Commencement.			June 16, Sunday

* See *Schedule of Classes* for detailed dates.

Academic and Administrative Holidays

Labor Day.	Monday	September 3, 1973
Thanksgiving Vacation (Classes dismissed at 3:00 p.m., Wednesday, Nov. 21)	Thursday and Friday	November 22, 23, 1973
Christmas Holiday.	Monday thru Tuesday	December 24 thru 25, 1973
New Years Holiday.	Monday thru Tuesday	December 31, 1973 thru January 1, 1974
Presidents Day.	Monday	February 18, 1974
Spring Holiday.	Monday	March 25, 1974
Memorial Day.	Monday	May 27, 1974
Independence Day.	Thursday	July 4, 1974

SUMMER 1974

Pre-enrollment for Summer Session.	April 1, 1974
Last day for applications to the Summer program for High School Juniors.	May 1, 1974
Summer Session High School Junior program begins.	June 22, 1974
Instruction begins for Summer Session.	June 24, 1974
Instruction ends for Summer Session.	August 2, 1974

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Introduction

The Santa Barbara Campus

The University of California, Santa Barbara is a distinguished academic community devoted to high standards of instruction, professional training and research in more than forty fields of scholarship. The faculty is dedicated to classroom teaching, supported by a Learning Resources Center which makes available the latest instructional devices and techniques. Numerous laboratories offer advanced scientific research facilities. The University Library contains nearly a million volumes in specialized and wide-ranging collections. The relaxed atmosphere, the attention to the individual student, the mild climate and a setting of unparalleled beauty combine to make UCSB a stimulating, appealing center of advanced learning.

Setting UCSB has one of the world's few seashore campuses. Situated on a promontory of 850 acres, it is bounded on two sides by the Pacific Ocean. On its third side it faces the Santa Ynez Mountains across the Goleta Valley. Most of the some forty permanent buildings which house the University are on the Main Campus. The Storke Campus contains playing fields and a housing complex for married students. The West Campus, which is largely undeveloped, contains an ecologically significant expanse of dunes which have been set aside as a natural preserve.

Adjoining the campus is the Santa Barbara Airport. A number of airlines provide air service to and from Los Angeles, San Francisco and other cities. Highway 101, one of California's major traffic arteries, passes less than a mile from UCSB, with clearly marked turn-offs leading to the campus. Regular rail and bus service is also available.

On-campus and between the campus and nearby residential areas, the principle means of transportation is by bicycle. A four-mile system of bike-paths and three bicycle underpasses separate cyclists from pedestrians and motorists.

Recreational facilities include tennis courts, more than a mile of swimming and surfing beach, an Olympic-sized swimming pool, extensive playing fields, a cinder track, a baseball diamond, two gymnasias, a stadium seating 14,000, an archery range and a small golf course. The climate is ideal for year-round outdoor activities.

History The campus had its beginnings in 1944 when Santa Barbara State College became a part of the University of California system. Under several names, the college had been engaged in the training of teachers for more than half a century. This, the seventh campus of the University, was known for the next fourteen years as the Santa Barbara College of the University of California. In 1953, the first Master of Arts programs were begun and the move to the present campus from the Santa Barbara Riviera was undertaken.

In 1958, the Regents changed the name and status of the college to that of a general campus of the University. The liberal arts departments constituted the College of Letters and Science. The College of Creative Studies, an undergraduate college, opened in the fall of 1967 as a separate academic unit for specially selected students. Two professional schools—the College of Engineer-

ing and the Graduate School of Education—were subsequently established. The Graduate Division began its existence, and steps were authorized which led to doctoral programs in many departments.

Community UCSB is located in the Goleta Valley about ten miles from downtown Santa Barbara. The greater metropolitan area has a population of about 125,000. For a city its size, Santa Barbara boasts a remarkable diversity of natural and cultural attractions. Notable among these are the Museum of Art, the Museum of Natural History and the Botanic Gardens.

By special arrangements the Santa Barbara Museum of Art and the Santa Barbara Museum of Natural History, both with large private endowments and excellent reputations and facilities, and the University of California, Santa Barbara, work together in the fields represented by these institutions. A number of University classes have been carried on during the past years at the Museum of Natural History, and important programs and classes at the Museum of Art have been arranged for the students of the University. Similarly, the facilities of the Santa Barbara Botanic Garden are available to classes and advanced students in botany. A research laboratory has been established at the Garden specifically for independent investigation by students and faculty.

Hillside House, a privately endowed home and school for cerebral palsied children, serves as an observation laboratory for students in psychology and speech. St. Vincent School, Lawrence Parma School, Santa Barbara and Ventura City Schools, Santa Barbara County Schools, and Devereux Ranch School meet a similar need for those interested in problems of the handicapped.

Accreditation The University of California, Santa Barbara has regional accreditation from the Western Association of Schools and Colleges. Further accreditations have also been granted by the State Department of Education (Teacher Education), the American Chemical Society (Chemistry), and the Engineer's Council for Professional Development (Chemical, Electrical and Mechanical Engineering).

University System UCSB is part of a state-wide University system stretching from Davis to San Diego. The University of California was founded in Oakland on March 23, 1868. Several years later it was moved to Berkeley. After more than a century of growth it is recognized as one of the world's great institutions of higher education and research, comprising nine campuses, six major research stations, nine agricultural field stations, fifty-three extension offices and a number of other components located throughout the state.

The University performs many services in addition to its regular programs of instruction. It is the primary state-supported academic agency for research. It provides many public services, including medical and dental clinics, informational services for agriculture, a program of adult education, summer sessions, public lectures, educational motion pictures and a broad program of business and professional conferences and institutes.

University Governance The organization and government of the University of California is entrusted, under the State Constitution, to a corporate body titled The Regents of the University of California. The Board of Regents is composed of twenty-four members, sixteen appointed by the Governor of the State for six-

teen-year terms and eight who are members because of offices they hold. These *ex officio* members are the Governor, the Lieutenant-Governor, the Speaker of the Assembly, the President of the State Board of Agriculture, the President of the Mechanics' Institute, the President of the Alumni Association, the State Superintendent of Public Instruction, and the President of the University. The Regents have "full powers of organization and government, subject only to such Legislative control as may be necessary to insure compliance with the terms of the endowments of the University and the security of its funds."

The President of the University is the executive head of the University in all its departments and on all its campuses. He is appointed by The Regents and is directly responsible to them. The President and his staff, with headquarters in University Hall at Berkeley, direct the development of major University-wide policy.

The Chancellor is the chief administrative officer on each campus and administers the organization and operation of the campus.

To participate in the administration of academic matters, The Regents have established an Academic Senate, consisting of the faculty and certain of the administrative officers. The Senate, subject to the approval of The Regents, determines conditions for admission of students, and for granting certificates and degrees. It authorizes and supervises all courses of instruction in the academic and professional schools and colleges and exercises general supervision of the discipline of students.

Colleges, Schools and Divisions

College of Letters and Science In July 1961, the College of Letters and Science was established at the University of California, Santa Barbara. Undergraduate students in the College are subject to the general requirements of the University, the general education requirements for the degree of Bachelor of Arts or the general education requirements for the degree of Bachelor of Science and Bachelor of Music, and major departmental requirements. More detailed information may be found in a later portion of this Catalog and in the *Letters and Science Announcement*.

College of Creative Studies In July 1967, the College of Creative Studies was established at the University of California, Santa Barbara. Each of its students is enrolled on the evidence of a substantial talent for independent work in an art or a science. The sole aim of the College is to instruct these students by all the means available to a faculty of artists and scholars whose special interest is to work closely with talented undergraduates. Work in the College leads to the Bachelor of Arts degree in the College of Creative Studies. Further information may be found in the *College of Creative Studies Announcement*.

College of Engineering In January 1961 The Regents of the University of California authorized the establishment of the School of Engineering at the University of California, Santa Barbara. In July 1966 the School was redesignated as a College of Engineering. Students have been enrolled since 1961 and several programs are now being offered.

Offerings in the College include undergraduate programs in Chemical, Electrical and Computer Science, Mechanical and Nuclear Engineering at all levels.

Graduate courses leading to the Master's degree and the Doctor of Philosophy degree are offered in Chemical, Electrical and Mechanical Engineering. See the *Bulletin of the College of Engineering* for additional information, and later in this Catalog.

Graduate School of Education The Graduate School of Education provides students admitted to the Graduate Division with instruction leading to recommendation for California standard elementary and secondary teaching credentials; specialized preparation in the area of speech and hearing; the supervision credential; and the pupil personnel services credential. Also offered is advanced study leading to a Master of Arts in Education, a Master of Education and programs leading to the Doctor of Philosophy in Education. Students expecting to obtain a teaching credential should consult with advisers in the Graduate School of Education, Education-Advising Office, as early as possible in their college career. Detailed information is available in the *Graduate School of Education Announcement*, and later in this catalog.

Graduate Division The University of California, Santa Barbara, offers advanced programs of study leading to the degrees of Master of Arts in most fields, including education, and the Doctor of Philosophy in anthropology, art history, biology, chemistry, comparative literature, dramatic art, economics, education, chemical, electrical and mechanical engineering, English, French, geology, German, history, mathematics, music, philosophy, physics, political science, psychology, religious studies, sociology, Spanish, and speech and hearing sciences. Also available is the Master of Fine Arts degree in studio subjects and the Master of Science degree in chemical engineering, electrical engineering, mechanical engineering, and scientific instrumentation. The Master of Education degree is offered in counseling psychology and confluent education. Advanced courses leading to completion of requirements for various teaching credentials are presented. For further information see the *Graduate Division Announcement*.

The University Library

The University Library contains 1,000,000 volumes in an open-stack arrangement serving all undergraduate and graduate programs. Approximately 17,500 periodicals and other serial publications are currently received. The phonograph record collection includes some 20,000 discs in music, foreign languages, speech and drama. Two informational pamphlet files supplement the book collections. The Library also receives 114 newspapers of which over 70 percent are foreign. Significant purchases of private libraries and collections of books and periodicals have expanded the University's research collections.

The Main Library consists of two major architectural units connected on the first and second floors and serving as a single structure to house the general book collection. The eight-story unit contains the Serials Department and current periodicals reading room, the Government Publications section and the Department of Special Collections. A significant expansion to the building is in the planning stages.

The Sciences-Engineering Library is located on the second floor of the two-story unit with a collection of 140,000 volumes in the physical sciences, life sciences,

military science and the varied branches of engineering, including 7000 serials titles. The Map Room houses 135,000 sheet maps plus all cartographic publications of the U. S. Geological Survey and the U. S. National Oceanographic Survey, the Library's extensive collection of atlases, and a collection of more than 14,000 aerial photographs concentrating on the coastal area of California.

The Oil Spill Information Center provides comprehensive documentation on oil spills on a worldwide basis with more than 10,000 items in a computer-produced catalog.

The Technical Report collection of more than 45,000 reports, maintained in the Sciences-Engineering Library, contains documents published by U. S. National Aeronautics and Space Administration, California Institute of Technology, U. S. Atomic Energy Commission and others.

The Government Publications Section is an official depository for U. S. Federal publications issued by the Superintendent of Documents and for all California State publications. An increasing number of documents from other states and from local governmental agencies are being acquired. In addition the Library receives all United Nations publications and selected foreign and international public documents.

The Reserved Book Service-Reading Room is located in the area immediately inside the west entrance and is open for study for longer hours than the general library. A schedule of hours is posted at the entrance.

The Curriculum Collection, located in Room 3523, Phelps Hall, contains a selected collection of children's literature and California state textbooks. It is a depository for curriculum materials issued by all California counties and major school districts.

The Department of Special Collections houses the endowed Wyles Collection of Lincolniana, Civil War and Western expansion materials. In addition, the department includes the Printers Collection of fine printing and private presses. Also there are collections of rare editions of English and American authors including Henry James, Samuel Becket, D. H. Lawrence, Ezra Pound, Henry Miller, Robert Frost, and others. Recent gifts and special purchases have enlarged the holdings of incunabula and manuscripts.

The Arts Library is located in the Music Building. It houses materials pertaining to music and fine arts. The Library's phonographic records collection and listening facilities are located in the Arts Library. An extensive collection of art exhibition catalogs is a special feature of the Arts Library.

The Chicano Studies Library Unit, known as the "Colección Tloque Nahauque," and the Center for Chicano Studies, called the "Centro," provide research collections for interdisciplinary research on the Chicano people. The Colección is on the third floor. The collection at the Centro is located on the second floor of the Chicano Studies Building.

The Black Studies Collection, located on the fourth floor, houses material on Afro-American history and culture, African and Caribbean literature.

The Oriental Collection of books and periodicals is separately shelved on the fifth floor. A card catalog and reference assistance are provided there.

Special library features include graduate seminar rooms, faculty study cubicles, study carrels, group study rooms, a typing room, a newspaper reading room, reading facilities for micro-text and coin-operated typewriters and copying equipment. A copy of the student handbook "Your Library" is available to every student. Individual help in use of the card catalog and in locating materials in the Library or in circulation is readily given by staff members. Library tours may be arranged through the Reference Department. Library hours are posted for each quarter and published in each quarterly *Schedule of Classes*.

Organized Research Units

At UCSB there are twelve extradepartmental groups: Bureau, Center, Institute and Laboratory—which are known as Organized Research Units (ORU). An ORU is an interdepartmental organization of faculty members and graduate students engaged in interdisciplinary research in a particular area. The ORU's provide research facilities and experience for students, as well as faculty members, in both basic and applied research.

Bureau of Educational Research and Development. The primary focus of the Bureau is on the solution of significant educational problems through multi-disciplinary inquiry. Recent projects of the Bureau have centered on (1) an analysis of educational programs for the seriously emotionally disturbed student in California and (2) the development of a training program for classroom teachers who supervise teacher interns.

The Center for Black Studies seeks to make the University experience relevant to the particular needs of Black students. This is facilitated by employing cross-disciplinary methods to evaluate problems affecting the learning experiences of Black people and developing corrective and preventative programs addressing those problems. Activities are divided into three (3) categories:

1. *Research and Analysis* (to develop projects designed to analyze problems of education, accumulate the empirical data, synthesize and interpret it).
2. *Community Education* (organization and maintenance of information acquired through research, dissemination of information to public programs, develop educational programs affecting the total population and serving as consultants to other agencies).
3. *Communication Organization* (mobilizing the community to utilize information in the development of positive community-change programs, developing cooperative activities with other existing agencies).

The Center for Chicano Studies conducts interdisciplinary research in the history and culture of the Chicano people, contributes to the development of curricular and teaching methods and plans and organizes comprehensive programs of community and University service to the Chicano people in the Tri-Counties area. The Center administers a research project on Chicano political communication, a summer Institute in Chicano Studies for teachers, counselors and administrators, a Community Organizations and Leadership Conference, a Chicano manpower project and a Bilingual Instruction and Training Institute.

The Center for the Study of Developing Nations conducts multidisciplinary research into the problems of national and regional development. Studies cover a broad

range of topics relevant to the development of the social and physical environment for both the advanced industrial nations and the less developed countries.

The Channel Islands Field Station with accommodations for twenty persons, is maintained on Santa Cruz Island. The unique, isolated, island environment has proven ideal for student and faculty research in anthropology, biology, geology and geography. Inquiries regarding use of the facilities or transportation to and from the Island should be addressed to the Director, Channel Islands Field Station, Marine Science Institute, University of California, Santa Barbara, California 93106.

The Community and Organization Research Institute promotes and coordinates research into community problems and the public institutions established to deal with them. Emphasis is on a multi-disciplinary or problem oriented approach involving areas of interest to faculty and students from the social, biological, and physical sciences, and the professional schools. It also seeks to make scientific techniques and data available to interested persons in the surrounding community.

The Computer Systems Laboratory is the focal-point for research in new computer techniques and the application of computer resources to research in other disciplines. The Laboratory serves to stimulate the use of computers in other fields and provides support through direct assistance or through collaborative projects. Those interested in such projects are encouraged to contact the Laboratory.

The Institute for Applied Behavioral Sciences seeks to increase the extent and effectiveness of the interaction between behavioral and social scientists and real world problems by a gradual extension of the University's behavioral research programs into the vast laboratories and problem areas available in the community. The Institute includes members of the departments of speech, psychology, education, sociology and Chicano studies. A research classroom for autistic children has been sponsored by the Institute and the Santa Barbara County school system.

The Institute of Environmental Stress is interdepartmental, including representatives from anthropology, biological sciences, health services, nutrition, physical education, electrical engineering, mechanical engineering and psychology. Its primary purpose is to further fundamental research in the understanding of the adaptive potentials of organisms and to provide broad coverage of the borderline fields that relate human function to the complex and changing environments to which man and other organisms are continuously exposed. Research includes not only external environmental stresses but also the aging process, exercise, cardio-respiratory diseases, biomedical engineering and neurophysiology.

The Institute of Religious Studies exists to foster cooperation between the various fields now engaged in studying man's religious experience, behavior and thought. By bringing together the varied viewpoints and contributions of those engaged in the scholarly and scientific study of religion, the Institute seeks to enlarge the scope and depth of human knowledge in this significant area of human experience. The Institute is the only public research agency in the country in the area of religion.

The Marine Science Institute is an interdepartmental organization which seeks to promote and facilitate research in marine science. The research interests of the Institute are focused largely on the local coastal area: the characteristics, resources and uses, both present and anticipated, of the near-shore marine environment and the effects of the use and development of the marine environment upon the coastal zone communities. Participants in the Institute include representatives from such departments as anthropology, biological sciences, economics, electrical engineering, geography, geology and political science.

The Quantum Institute (or more properly the Institute for the Study of the Interaction Between Electromagnetic Radiation and Matter) is designed to facilitate interdisciplinary research on the broad subject of electromagnetic interactions, frequently with coherent radiation, primarily with applications in biology, chemistry, electrical engineering and physics. The Institute is located in the north wing of the Physics Building.

Other Campus Programs

Summer Sessions offer qualified students lower and upper division courses, advanced special study undergraduate courses, and graduate courses leading toward the Master of Arts degree, the Doctor of Philosophy degree, or the standard teaching credentials with specialization in elementary, secondary, or junior college teaching. A college orientation program of regular session courses is offered in summer session to a selected group of high school students who have completed the junior year and to students who graduate from high school each year.

A list of Summer Sessions courses and the *Summer Sessions Bulletin* are available each year in March and may be obtained upon request to the Summer Sessions office, Room 5707, Ellison Hall.

Computer Center The Computer Center offers interactive, online computing through graphical output display terminals. The Culler-Fried System, as it is known, runs on the IBM System 360, Model 75 Computer which is also used for conventional batch computing services. There are several minicomputers at various campus locations linked to the Model 75 and the Model 75 is linked to a national computer network which makes a variety of computing resources at other universities available to our faculty and graduate students. The combination of on campus computing resources with those available through the network provides excellent support for the instructional and research programs at this campus.

Arts and Lectures The Committee on Arts and Lectures pursues a two-fold mission: to serve the cultural life of the campus community and to extend and supplement the intellectual life of the classroom. In its quest for quality, the Committee makes an exhaustive search for outstanding productions, lectures and performing artists to bring to the campus. These events, which are open to the public, include films, art exhibitions, dance events, concerts, plays and lectures. Each year several events are co-sponsored with the Associated Students.

During each academic year, Arts and Lectures sponsors a concert series of world renowned artists. Outstanding touring drama companies are invited to

perform on the campus. Virtually all the better known dance companies have appeared in Campbell Hall.

In addition, the Committee presents a series of from fifty to sixty lectures annually, covering a variety of topics of general interest.

The Regent's Professorship and Lectureship appointments bring to the campus, for a quarter or a month, distinguished persons from non-academic fields.

A weekly film series is programmed each quarter. Films are selected with broad ranges of style and subject matter. In addition to the regular program, special showings of short films are presented each year.

Frequent performances are offered by students and faculty from the departments of music, drama and dance. The Department of Music presents the University Symphony Orchestra, Opera Workshop performances, the Modern Chorale, the Men's and Women's Glee Clubs, the Chamber Singers, *Musica Antiqua*, the Schubertians, and recitals by faculty and student artists.

The Department of Drama presents student performances of classics, contemporary and extemporaneous drama. And each quarter, the Dance Division presents the University Dance Group in an evening of student and faculty choreography varying in style and mood from lyrical movement to mime and comedy.

The Art Galleries offer exhibitions of exceptional quality throughout the year, including an annual faculty show in the fall, an annual student exhibition in the spring and an exhibition of work accomplished by graduate students who have completed their requirements for the M.F.A. Over the past several years, important exhibitions have included Ralph Blakelock, Kem Weber, Herbert Bayer, Mark Tobey, Paul Klee, Max Weber, Josef Albers, William Merritt Chase, and the architectural exhibits of George Washington Smith, Charles Moore, R. M. Schindler, Louis Christian Mullgardt, and Charles F. A. Voysey. The Galleries' permanent collection includes the Sigmond Morgenroth group of Renaissance and Baroque medals and plaquettes; the Sedgwick Collection of 15th to 17th century paintings; the R.M. Schindler Collection of the architect's drawings, sketches, photographs, etc.; the F. May Young Collection of Indian crafts; the Helm and Goodspeed Collections of Pre-Columbian art; and the Ala Story Print Collection as well as other smaller collections. Selections from the Sedgwick Collection, the Morgenroth Collection and the Schindler Collection are on continuous display in their respective galleries and representative groups of the other collections are displayed from time to time. Gallery hours are 10-4 Monday through Saturday and 1-5 Sundays and holidays.

Education Abroad Program Since 1961, the administrative offices of the University of California's Education Abroad Program have been located on the Santa Barbara campus. Rated by the Western Association of Schools and Colleges as one of the best overseas study programs operated by any American university, EAP maintains relations with cooperating schools in fifteen countries on four continents, enabling an average of more than 600 University of California students to study each year abroad while still enrolled on their home campuses and thus receive full academic credit. The EAP also assumes responsibility for foreign students attending the University under reciprocity agreements. More

detailed information is contained in the section of this catalog entitled "Courses of Instruction."

University Extension links the educational resources of the University with individuals and organizations throughout Kern, San Luis Obispo, Ventura and Santa Barbara Counties. Extension programs offer educational opportunities for adults in professional, administrative, and managerial fields so that they may keep abreast of the latest research in their respective fields. Educational programs are also available which will enable adult citizens to continue their intellectual and cultural interests. Many Extension offerings are designed to contribute to the development of an informed and responsible citizenry by offering informational programs on a variety of contemporary issues. Educational and consultative services are provided to governmental and voluntary agencies on such problems as population growth, urbanization, and the impact of technological advances on the environment.

A variety of methods are used to implement these aims: classes, discussion groups, seminars, conferences, short courses, lecture series, correspondence courses, films, television and radio, and vocational counseling and testing.

A program of summer courses and workshops is regularly offered. Veterans may use educational benefits available to them to enroll in University of California Extension classes if the classes are part of the objectives approved by the Veterans Administration.

Extension offers a limited number of scholarships.

For information and catalogs, contact UC Extension—Telephone 961-3231.

Conference Facilities of the University of California, Santa Barbara are available for staff and departmental meetings of educational institutions, government agencies, and organizations whose conference requests demonstrate a clear, definable educational need.

Services provided by the Conference Department include initial consultation with staff on planning of program including staffing and scheduling, consultation on publicity and promotion for conference, arrangements for classroom and meeting space and special equipment, arrangements for residence hall facilities and meals, and other services.

For further information regarding conference facilities or arrangements for their use, contact the Conference Coordinator, Department of Residence Halls, University of California, Santa Barbara, California 93106. Telephone 961-3072.



Admission to the University

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Admission to the University

Admission to Undergraduate Status

The admission requirements of the University are based on two principles: first, that the best assurance of success in the University is shown by high quality of scholarship in previous work and, second, that the study of certain specified subjects will give the student both good preparation for the work of the University and reasonable freedom in choosing his field of specialization.

In addition to the high school subjects required for admission to the University, certain preparatory subjects are recommended for many University curricula to give the student an adequate background for his chosen field of study. Lack of recommended high school courses may delay graduation from the University. Details of these recommendations will be found in the bulletin, *Prerequisites and Recommended Subjects*, which is ordinarily in the hands of high school and junior college counselors and which may be obtained from the Office of Admissions or the University Dean of Educational Relations, 570 University Hall, University of California, Berkeley, California 94720.

All students should pursue a full program of academic subjects during their senior year in high school.

No engineering examinations are required for admission to either the lower or upper division of the engineering programs at the University of California, Santa Barbara.

Applicants not eligible for admission to the University are usually advised to attend one of the California junior colleges and take courses applicable toward the requirements of the college or school of the University in which they wish to enroll.

In the case of a student who is technically ineligible for admission to the University, the Admissions Officer has authority and responsibility to consider other evidence of ability to pursue University work.

Application for Admission Applications should be filed with the Office of Admissions, Room 1210, Administration Building, University of California, Santa Barbara, California 93106. Application forms will be available at all senior high schools and junior colleges in California. Application forms will be mailed to out-of-state applicants upon request. The application can be filed commencing with the following dates:

July 1, 1973	Winter quarter 1974
October 1, 1973	Spring quarter 1974
November 1, 1973	Fall quarter 1974

All campuses observe the opening dates listed above for the acceptance of undergraduate applications. The deadline for filing an application for admission, however, will vary from campus to campus. Each campus has enrollment quotas that limit the number of new freshmen and new advanced standing students that may be admitted. Once these quotas have been filled, additional applications cannot be accepted and will be forwarded to another University campus where enrollments are still open. (This may apply to applicants for intercampus transfer.)

Admission requirements are uniform on all campuses of the University. Admission to the University entitles the student to attend the campus of his choice if the required facilities are available there. Since applications will be processed and acted upon in only one Office of Admissions, applications directed to more than one campus should not be filed.

If, after a student has filed his application, he decides to register on a different campus, he should write to the Director of Admissions, 570 University Hall, University of California, Berkeley, California 94720, indicating the campus where he filed his application, the campus where he now wishes to register, and the reason for his change. His records will be transferred to the campus he wishes to attend provided facilities are available there. Such request must be received prior to the close of the filing date for that quarter.

Application Fee Each applicant for admission is required to pay a non-refundable fee of \$20 when an application is filed. Remittance by bank draft or money order payable to The Regents of the University of California should be attached to the application.

An applicant who is not eligible for admission or one who has been admitted but does not register in the quarter for which he applied, and who thereafter desires to attend the University, must submit a new application for admission with a \$20 fee. The new application will be acted upon in the light of current availability of facilities and current admission requirements.

Transcripts of Record Each applicant is responsible for requesting the graduating high school and each college attended to send official transcripts of record directly to the Office of Admissions. Transcripts from the last college attended should include a statement of good standing or honorable dismissal. A preliminary transcript should show work in progress.

Notification of Eligibility So that students may be informed as early as possible about eligibility, they are urged to apply early in the application period and request promptly to have transcripts of record sent to the Office of Admissions.

The time between receipt of an application by the Office of Admissions and notification to the applicant about his eligibility will vary. Students applying as first-quarter freshmen should ask the high school to submit preliminary transcripts showing the complete record through the next-to-last semester before graduation and listing courses in progress during the final semester.

Those who apply early may receive notification somewhat more promptly. Since the receipt of preliminary transcripts may shorten this interval, applicants should arrange for the submission of preliminary transcripts showing work in progress.

Dates for Notification of Admission, 1973-74: Fall Quarter, May 15, 1973; Winter Quarter, December 15, 1973; Spring Quarter, March 15, 1974.

Admission to Freshman Standing

An applicant for admission to freshman standing is one who has not registered in regular session in any college-level institution since graduation from high school.

If the applicant does not meet at the time of high school graduation the requirements given below for admission to freshman standing, he must qualify for

admission to advanced standing. An exception to this regulation will be made only if the student's deficiency was the result of his having omitted one or more required high school subjects. Such a student can sometimes remove the deficiency during the summer; he should consult in advance the Office of Admissions.

In order to meet these subject requirements, the courses offered in satisfaction thereof must be included on a list submitted to the Director of Admissions of the University by the high school principal if the school is located in California. This list must be certified by the principal to the effect that the courses included thereon meet the requirements for admission to the University, and further, this certified list must be approved by the Director of Admissions of the University. If the high school is not located in California, courses will be considered acceptable if the school is accredited.

If the applicant has registered in a junior college, a four-year college, a university, extension classes of college level, or any comparable institution since graduating from high school, he is subject to regulations governing admissions in advanced standing.

Requirements Applicants for admission to freshman standing must meet the requirements listed below. These requirements apply to California residents; for special requirements for out-of-state applicants see section on residency.

Graduation from High School An applicant who has been graduated from a high school in California will be admitted to the University upon the completion of prescribed courses with the required scholarship average.

When a resident of California has been graduated from a high school outside California, the acceptability of the record is determined by the Office of Admissions.

Subject Requirements

a. History, 1 unit.

This must consist of 1 unit of United States history, or $\frac{1}{2}$ unit of United States history and $\frac{1}{2}$ unit of civics or American government.

b. English, 3 units.

These must consist of six semesters of English composition, literature, and oral expression.

c. Mathematics, 2 units.

These must consist of two units of subjects such as elementary algebra, geometry, intermediate and advanced algebra, trigonometry, calculus, elementary functions, matrix algebra, probability, statistics, or courses combining these topics. Arithmetic and such nonacademic subjects as shop mathematics are excluded.

d. Laboratory Science, 1 unit.

A year course in one laboratory science taken in the tenth, eleventh, or twelfth grades, 1 unit.

e. Foreign Language, 2 units.

These must be in one language. Any foreign language with a written literature is acceptable.

f. Advanced Course, 1 (or 2) units.

This must be chosen from one of the following:

Mathematics, a total of 1 unit composed of second-year algebra, solid geometry, or trigonometry.

Foreign language, either 1 additional unit in the same foreign language offered under *e* or 2 units of another foreign language.

A year course in any laboratory science completed subsequent to the science offered under (d) 1 unit.

Electives Additional elective units to complete the minimum of 15 standard entrance units are also required.

Scholarship Requirements At least a B average is required in courses taken after the ninth year used to meet the subject requirements. Grades received in elective courses or in courses taken in the ninth year or earlier are not used in computing this average. Subject requirements are satisfied by courses in which a grade of C or higher has been assigned. Grades are considered on a semester basis except from schools that give only year grades. Grades, including those earned in accelerated and advanced courses, are accepted as they appear on the transcript.

In determining the B average, a grade of A in one course will be used to balance a C in another, but an A may not be used to compensate for D, E, or F grades.

Repetition of Courses Courses taken in the ninth year or earlier in which a grade of D or lower is received may be repeated to establish subject credit.

Courses taken after the ninth year in which a grade of D or F is received may be repeated to establish subject credit and to improve scholarship. Courses may be repeated in an amount not to exceed a total of 1 unit of the *a* to *f* pattern. Grades earned in such repetitions will not be counted higher than a C in determining scholarship average.

Examination Requirements As a requirement for admission, all freshman applicants (and advanced standing applicants who have earned less than twelve units of college credit subsequent to high school graduation) must submit scores from the following examinations of the College Entrance Examination Board:

1. The Scholastic Aptitude Test
2. Three Achievement Tests, which must include:
 - a. English composition
 - b. Social studies or foreign language
 - c. Mathematics or science

Applicants whose scholarship average in the required high school subjects is 3.00 to 3.09 inclusive must achieve a minimum total score of 2500 on the examinations. The test results of all applicants will be used for the purpose of counseling, guidance, placement, and, when possible, in satisfaction of the Subject A requirement.

Admission by Examination Alone An applicant who is ineligible for admission to freshman standing and who has not attempted college work subsequent to high school (except during the summer session immediately following high school graduation) may qualify for admission by examination alone.

To qualify, the applicant who is ineligible for admission must take the examinations required of eligible applicants, but must achieve higher scores. The required minimum total score on the Scholastic Aptitude Test is 1100. On the three Achievement Tests the required minimum total score is 1650 with no score less than 500 on any one test. For admission of out-of-state applicants by examination see section on residency.

Arrangements to take the tests should be made with the Educational Testing Service, P. O. Box 1025, Berkeley, California 94701, or P. O. Box 592, Princeton, New Jersey 08540. The fees are to be paid to the Educational Testing Service. Scores will be regarded as official only if they are received by the Office of Admissions directly from the Educational Testing Service.

Applicants should arrange to take the tests as early as possible. *The scores of an applicant who takes the tests after January will delay consideration for admission in the fall; similarly, the scores of an applicant who takes the tests in January will be reported too late for consideration for admission in the winter and spring quarters.*

Admission to Advanced Standing

An applicant who has registered in a junior college, a four-year college, a university, extension classes of college level, or any comparable institution since graduation from high school is subject to regulations governing admission to advanced standing. The applicant may not disregard his college record and apply for admission to freshman standing. However, an advanced standing applicant who has earned less than twelve units of college credits subsequent to high school graduation must satisfy the examination requirement for freshman applicants.

Requirements Applicants for admission to advanced standing must meet the requirements listed below. These requirements apply to California residents; for special requirements for out-of-state applicants see section on residency.

The requirements for admission to advanced standing vary in accordance with the high school record of the applicant. All applicants, however, must present from the last accredited college or university attended (a) a statement of good standing, and (b) an academic record with a grade-point average* of C (2.0) or better. If the record established in any one accredited institution is below a C (2.0) average, an additional unit and scholarship requirement may be imposed on subsequent credit completed to offset the deficit incurred. In addition, the applicant must meet one of the following conditions:

1. An applicant who was eligible for admission to the University in freshman standing may be admitted at any time he has established an overall grade-point average of C or better.

2. An applicant who was ineligible for admission to the University in freshman standing, but whose only deficiency arose from not having studied one or

*The grade-point average is determined by dividing the total number of acceptable units attempted into the number of grade points earned on those units. Courses completed with a grade lower than C may be repeated, but the units and grade points count each time the course is taken. Scholarship standard is expressed by a system of grade points and grade-point averages in courses acceptable for advanced standing credit in the University of California. Grade points are assigned as follows: for each unit of A, 4 points; B, 3 points; C, 2 points; D, 1 point; E and F, no points.

more of the required high school subjects, may be admitted when the following conditions are met:

- a. He has established an overall grade-point average of C or better, and
- b. He has satisfied, by appropriate courses, the subject requirements for admission to freshman standing.

Exception: deficiencies in subject requirements will be waived if the applicant has established a minimum of 84 acceptable quarter units or 56 acceptable semester units passed with a grade-point average of 2.0 or better.

3. An applicant who was ineligible for admission to the University in freshman standing because of low scholarship or a combination of low scholarship and incomplete subject preparation (omission, or by grades of D or lower) may be admitted when the following condition is met:

He has established a minimum of 84 acceptable quarter units or 56 acceptable semester units passed with a grade-point average of 2.0 or better.

Credit for Work Taken in Other Colleges The University grants unit credit for courses appropriate to the curriculum in the University that have been completed in colleges and universities accredited by regional accrediting associations.

As an integral part of the system of public education of California, the University accepts, at full unit value, approved transfer courses completed with satisfactory grades in the public junior colleges of the State. Frequently, students who intend to complete their advanced studies at the University will find it to their advantage to complete the first two years of their college course in one of the many excellent California public junior colleges. Students in the College of Letters and Science should consult that college portion of this catalog or the *Letters and Science Announcement* for an exception.

Extension courses taken at an institution other than the University may not be acceptable. The decision regarding their acceptability rests with the Office of Admissions.

College Level Examination Program

Advanced standing credit will be granted for certain College Level Examination Program (CLEP) tests with high scores. Credit varies, depending on type of test, previous college credit, and score.

Requirements for Out-of-State Applicants

It has been necessary to place some limitation on enrollment of applicants who are not residents of California, and, therefore, only those of exceptional promise will be eligible for admission. The regulations below are designed to admit out-of-state applicants whose standing, as measured by scholastic records, is in the upper half of those who would be eligible under the rules for California residents.

Requirements for Freshman Standing Graduation from High School

For schools outside California, the University determines the acceptability of the high school record.

Subject Requirements

The same subject pattern as for California residents is required.

Scholarship Requirements

The scholarship requirements for in-state applicants apply to out-of-state applicants except that the applicant must have maintained a grade-point average of 3.4 or higher on the required high school subjects.

Examination Requirement

Same pattern of tests as for California residents. Scores will be used only for counseling, guidance placement and, when possible, in satisfaction of the Subject A requirement.

Admission by Examination Alone

Same as for California residents except that scores of three Achievement Tests must total at least 1725 with no less than 500.

Requirements for Advanced Standing In addition to the regular admission requirements, out-of-state applicants for admission to advanced standing must meet the following regulations:

The applicant must have maintained a grade-point average of 2.8 or higher in college subjects attempted and acceptable for transfer credit.

The applicant is expected to have fulfilled the pattern of required high school subjects, if not before high school graduation then by having included in his college program the courses needed to remove any subject shortages. However, deficiencies in subject requirements will be waived in an amount not exceeding 2 high school units if the applicant presents a minimum of 84 acceptable quarter units passed or 56 acceptable semester units passed with a grade-point average of 2.8 or higher. Subject deficiencies in excess of 2 units must be satisfied

If the applicant did not have at the time of high school graduation an average of 3.4 or higher in courses satisfying the required subject pattern, he must present a minimum of 84 acceptable quarter units passed or 56 acceptable semester units passed with a grade-point average of 2.8 or higher.

Other Admission Categories

Admission to Special Status Special students are students of mature years who have not had the opportunity to complete a satisfactory high school program or who have not completed a substantial amount of college work and who by reason of special attainments may be prepared to undertake certain courses in the University toward a definite and limited objective. No person under twenty-one years of age will be admitted as a special student, nor will an applicant be admitted directly from high school. Only cases of unusual merit will be considered. A personal interview is usually required before final action in any individual case can be taken.

Conditions for admission are assigned by the Admissions Officer and are subject to the approval of the dean of the college or school in which the applicant plans to study. Admission is for a specified time only and a prescribed scholarship average must be maintained.

An applicant for special status must submit transcripts of record from all schools attended beyond the eighth grade. He may also be required to take the examination in Subject A.

The University has no special courses. A special student may be admitted to those regular courses for which, in the judgment of the instructor, he has satisfactory preparation. A special student will seldom be able to undertake the work of the engineering and professional colleges or schools.

An applicant will not be admitted to special status for the purpose of making up requirements for admission to the University as a regular student.

Admission to Limited Status Students in limited status are those with a bachelor's degree who are not candidates for an advanced degree or those without a bachelor's degree who have completed a substantial amount of college work with a satisfactory scholarship average and who by reason of special attainment may be prepared to undertake certain courses in the University toward a definite and limited objective. An applicant for limited status must submit transcripts of record from all schools attended beyond the eighth grade. The applicant may also be required to take examination in Subject A.

Conditions for admission are assigned by the Admissions Officer and are subject to the approval of the dean of the college or school in which the applicant plans to study. Prescribed scholarship average must be maintained. Students in limited status are not permitted to enroll in graduate courses (200, 300, 500 series). Admission of limited students remains valid for the quarter issued through the last quarter of the current academic year only.

Admission of Applicants with Bachelors' degrees Ordinarily, an applicant with a bachelor's degree substantially equivalent to the bachelor's degree granted by the University of California should apply for admission to graduate status. An applicant with a superior record may occasionally qualify as a student in limited status or, after a complete change of objective, as an undergraduate seeking a second baccalaureate. In either case, the previous scholarship record must be such as to indicate very strong probability of academic success. Admission is subject to the approval of the Admissions Officer and of the dean of the school or college in which the applicant plans to enroll.

Admission to Graduate Status All persons seeking graduate standing must apply to the office of the Dean of the Graduate Division. Each applicant must file two copies of a formal application and two official transcripts from each college and university he has attended. The deadlines for application for admission and re-admission are: August 1, 1973, for the fall quarter; November 1, 1973, for the winter quarter; February 1, 1974, for the spring quarter; May 1, 1974, for the Summer Session. The application blanks may be obtained from the Graduate Division, University of California, Santa Barbara, California 93106. The applications and reapplications must be accompanied by a check, money order, or bank draft for \$20 in payment of the application fee. Payment should be made for the exact amount, and checks, drafts, or money orders should be made payable to The Regents of the University of California.

In order to be admitted to graduate status at the University of California students must hold a bachelor's degree or its equivalent from an institution of ac-

ceptable standing. The program of preparation should be substantially equivalent both in the distribution of academic subject matter and in scholarship achievement to the requirements for a comparable degree at the University of California. Applications for admission are evaluated in terms of scholastic qualifications and formal preparation for the graduate field of study.

The Dean of the Graduate Division, or the department in which the applicant wishes to pursue an advance degree, may deny him admission if his scholastic record or his undergraduate program of study is judged not adequate as a foundation for advanced academic or professional study. This procedure applies to all applicants, whether they come from schools or colleges within the University of California or elsewhere. Students with good undergraduate averages whose undergraduate preparation does not meet the requirements for a baccalaureate degree in the University of California may be required to take certain courses in addition to their degree programs. Individual departments may have special requirements for admission to graduate status.

Students who do not desire to become candidates for higher degrees must meet the same admission requirements as those who are prospective candidates for degrees. They must be admitted to a specific field of study and they must satisfy the Dean that their program of study has a definite scholarly or professional purpose. Such students are not eligible for exemption from the nonresident tuition fee.

Readmission After Absence All former students who wish to re-enter the University of California, Santa Barbara, must file an application for readmission with the Registrar. Official transcripts of all work attempted in the interim must be submitted. Former students are those who have been absent two quarters or more or who withdrew within the last quarter in attendance. For this purpose the Summer Session is counted as a quarter.

Admission of Applicants from Other Countries The credentials of an applicant for admission from another country in either undergraduate or graduate standing are evaluated in accordance with the general regulations governing admission. An application, official certificates, and detailed transcripts of record should be submitted to the Office of Admissions several months in advance of the opening of the quarter in which the applicant hopes to gain admittance. Doing so will allow time for exchange of necessary correspondence and, if the applicant is admitted, will help him in obtaining the necessary passport and visa.

An applicant from another country whose native language is not English may be admitted only after demonstrating that his command of English is sufficient to permit him to profit by instruction in the University. An applicant's knowledge of English is tested by an examination given by the University. Admission of an applicant who fails to pass this examination will be deferred until he has acquired the necessary proficiency in the use of English.

A student from a country where the language is not English is given college credit in his own language and its literature only for courses satisfactorily completed. Such credit will be allowed only for courses taken in his country at institutions of college level, or for upper division or graduate courses taken in the University of California or in another English-speaking institution of approved standing.

English Language Requirement—For Non-Immigrant Foreign Applicants In the University of California, English is the language of instruction and communication. Unlike many overseas colleges and universities, the University of California counts toward your record your daily classwork, written papers you submit, and frequent short examinations; your success will not depend solely on a few major examinations. To ensure the adequacy of your ability to understand English, you will be required to take the English Language Placement Examination (see *Schedule of Classes* for date of examination) unless exempted for one of the following reasons:

1. The student is a native of an English-speaking country
2. You enter with a grade of "C" or better in a composition course which satisfies the English 1-A requirement
3. You have completed undergraduate English requirements at an American college or university
4. You have completed all of the required English as a Second Language (ESL) courses at another University of California campus
5. You hold a Master's degree from an American university. On the basis of results of the English Language Placement Examination students will be recommended for one of the following courses of action:
 1. Students scoring above the advanced level of English proficiency (written and oral) on the placement exam will be exempted from all English as a Second Language (ESL) course requirements.
 2. Those scoring in the advanced level of the written part of the placement exam will be required to complete ESL 1-C (Advanced Reading and Composition).
 3. Those scoring below the minimum level for exemption on the aural/oral part of the exam will be placed in ESL 1-B (Speaking and Listening).
 4. If a student places at an intermediate level on the exam (written), he will be required to enroll in ESL 1-A (Intermediate English). In addition the student will be required to complete ESL 1-C, the advanced level course.

In the event that a student places at an elementary level of English proficiency on the placement exam, he will be given assistance in finding a suitable and reasonably priced language school for further intensive English instruction prior to entering the University.

In all cases where ESL courses are required, each of these courses should be part of a limited-curriculum the quarter it is taken. When only one course is required, it should be taken the first quarter the student is in attendance. If two or more ESL courses are required, it is recommended that only one of these be taken in each consecutive quarter.

Foreign students whose schooling has not been in English are required to submit the results of the Test of English as a Foreign Language (TOEFL) taken in their home countries. Arrangements for the test may be made by writing to TOEFL, Educational Testing Service, P. O. Box 592, Princeton, New Jersey, U.S.A. 08540. Undergraduates should forward test results to the Admissions Office; graduates to the Graduate Division of the UCSB campus.

Intercampus Transfer An undergraduate student who is registered on any campus of the University, or who was previously registered in a regular session of

the University and has not since been registered in another institution may apply for transfer to another campus of the University by filing the proper forms *on the campus where he was last registered*. The intercampus transfer application forms and application for transcript of record forms may be obtained from the Office of the Registrar at the campus where currently enrolled or last attended in a regular session, and must be filed with that office within the filing periods shown above. A \$20 application fee for intercampus transfers is required.



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Expenses, Fees, and Financial Aid

Student Expenses

The question of expenses while attending the University of California, Santa Barbara, is of importance to every student. Certain expenses are common to all students. Other expenditures are optional and vary considerably according to differences in interest.

Although each student must determine his own budget in keeping with his needs and resources, the University can provide the following as a guide in computing combined average expenses for Fall, Winter and Spring quarters.

Room and board (20 meals a week) for three quarters in a University residence hall, double room rate.....	\$1295.00
Additional sum to cover Sunday evening meals which are not provided in the University residence halls.....	80.00
Residence Hall Association fee, per year.....	12.00
Registration fees, including the University Registration fee (\$300 per year), Educational fee (\$300 per year), the Associated Students fee (\$39.75 per year), Insurance fee (\$32 per year) and the University Center fee (\$18 per year).....	689.75
Books and supplies per year may average.....	180.00
Personal expenses, including clothing, laundry and cleaning, recreation, and transportation, average approximately.....	500.00
Average total for three quarters.....	<u>\$2756.75</u>

Students classified as nonresidents pay an additional \$500 per quarter as tuition. Board and room costs for students making alternative housing arrangements will, of course, vary.

Fees

Remittance of fees by mail should be either by money order, cashier's check, or personal check made payable to The Regents of the University of California, and mailed to the Cashier's Office, University of California, Santa Barbara, California 93106. The full legal name and alpha number of the student for whom fees are being paid should be indicated on the check or by separate letter accompanying the payment. Parking fees should be paid separately at the Parking Office.

	Fall Quarter	Winter Quarter	Spring Quarter
UNDERGRADUATE			
Registration Fee	\$100.00	\$100.00	\$100.00
Educational Fee	100.00	100.00	100.00
Associated Student Fee	13.25	13.25	13.25
University Center Fee	6.00	6.00	6.00
*Accident and Health Insurance	32.00	(24.00)	(16.00)
Total California Resident	<u>\$251.25</u>	<u>\$219.25</u>	<u>\$219.25</u>
Non-Resident Tuition	\$500.00	\$500.00	\$500.00
Total Non-Resident	<u>\$751.25</u>	<u>\$719.25</u>	<u>\$719.25</u>

* See following "Student Accident and Health Plan Fee."

	Fall Quarter	Winter Quarter	Spring Quarter
GRADUATE			
Registration Fee	\$100.00	\$100.00	\$100.00
Educational Fee	120.00	120.00	120.00
University Center Fee	6.00	6.00	6.00
Graduate Student Assn. Fee	1.00	1.00	1.00
*Accident and Health Insurance	32.00	(24.00)	(16.00)
Total California Resident	\$259.00	\$227.00	\$227.00
Non-Resident Tuition	500.00	500.00	500.00
Total Non-Resident	\$759.00	\$727.00	\$727.00

Application Fee An applicant who wishes to enter the University must fulfill the general requirements for admission. Application blanks may be obtained from the Office of Admissions; University of California, Santa Barbara; Santa Barbara, California 93106. Every applicant for admission is required to pay a fee of \$20 when his first application is filed. Remittance by bank draft or money order should be made payable to The Regents of the University of California.

Deposit Fee Each student to be admitted will be required to return an Acceptance of Admission form, together with a non-refundable fee of \$50 which will be credited to the registration fee.

University Registration Fee The University Registration fee is \$100 per quarter for both undergraduate and graduate students. This fee, which must be paid at the time of registration, covers certain expenses of students for athletic and gymnasium facilities and equipment, lockers, laboratory and course fees, counseling and placement services, such consultation, medical advice, and hospital care, or dispensary treatment as can be furnished by the Student Health Service. No part of this fee is remitted to those students who may not desire to make use of all or any of these privileges.

Educational Fee This fee is paid by all Registered Students of the University of California in addition to any others presently required. Regents shall decide on appropriate use of these funds. Resident Students with demonstrated financial need may defer payment of the Educational Fee by accepting an obligation to repay the sum deferred after completion of their higher education. The deferred provision refers only to the Educational Fee and not to the other fees assessed by the University. Students interested in this provision should contact the campus Financial Aids Office.

Student Accident and Health Plan Fee A supplemental accident and health insurance plan is sponsored by Associated Students UCSB. A fee of \$32.00 for 12 months coverage is payable at the time registration fees are paid for Fall. The fee is \$24.00 for 9 months coverage for students entering in the Winter Quarter, \$16.00 for 6 months coverage for students entering in the Spring Quarter. Participation in the plan is mandatory unless covered by other health insurance.

Tuition Tuition is free to every student who has been a legal resident of the State of California for a period of more than one year immediately preceding the opening day of the quarter during which he proposes to enroll. Every stu-

See following "Student Accident and Health Plan Fee."

dent who has not been a legal resident of the State for said period is classified as a nonresident and is subject to payment of a nonresident tuition fee of \$500 per quarter. A student entering the University for the first time should read carefully the rules governing the determination of residence as quoted below so that he may be prepared in the event of nonresident classification to pay the required tuition fee. Every entering student and every student returning to the University after an absence is required to make a Statement as to Residence on the day of registration upon a form that will be provided for that purpose and his status with respect to residence will be determined soon after registration by the Attorney in Residence Matters.

Filing Fee A fee of \$50 has been established for the filing of a doctoral dissertation, a master's thesis, and/or the formal final examination for the doctor's or the master's degree.

Intercampus Transfer Fee A \$20 fee for intercampus transfers is required with ICT applications.

University Center Building Fee A University Center fee is charged all students registered for 6 units or more. The fee is \$6 per quarter and is used to repay construction loans.

Associated Students' Membership Fee The student membership fee is \$13.25 per quarter and is paid at the time of registration.

Deficit Program A student programmed for fewer than 6 units is not required to pay the Associated Students' fee. Waivers should be requested from the Registrar's Office *prior* to payment of fees. Students who change their programs to less than 6 units may request a refund of their Associated Students' fee of \$13.25. This request must be made in the Registrar's Office by the end of the second week of classes. The Associated Students' membership card must be turned in with this request, and at that time the student relinquishes the privileges of an Associated Students member.

Miscellaneous Fees and Refunds A schedule of miscellaneous fees and other information on this subject, *Student Fees and Deposits*, may be obtained from the Cashier, University of California, Santa Barbara.

No claim for remission of fees will be considered unless presented during the fiscal year in which the fee was paid. Receipts are issued for all payments, and these receipts should be retained. Refunds may not be made until the original receipt is surrendered. All fees are subject to revision by The Regents of the University of California.

Rules Governing Legal Residence

Nonresident Tuition Fee Students who have not been legal residents of California for more than one year immediately prior to the residence determination date for each quarter in which they propose to attend the University are charged, along with other fees, a tuition fee of \$500 for the quarter. The residence determination date is the earliest opening day of the term on any of the University of California campuses.

Legal residence is established by an adult who is physically present in the state while, at the same time, intending to make California his permanent home.

The prior legal residence must be relinquished, and steps must be taken at least one year prior to the quarter to evidence the intent to make California the permanent home. Some of the relevant indicia of an intention of California residence are: voting in elections in California and not in any other state; satisfying resident California state income tax obligations on total income; establishing an abode where one's permanent belongings are kept; maintaining active resident memberships in California professional or social organizations; maintaining California vehicle plates and operator's license; maintaining active savings and checking accounts in California banks; maintaining permanent military address or home of record in California if one is in the military service, etc. Conduct inconsistent with the claim of California residence would include, but not necessarily be limited to, the following: maintaining voter registration and voting in person or by absentee ballot in another state, if the basis of the franchise is legal residence; obtaining a divorce in another state; attending an out-of-state institution as a resident of the state in which the institution is located; obtaining a loan requiring legal residence in another state.

The student who is within the state for educational purposes only does not gain the status of resident regardless of the length of his stay in California. In general, the unmarried minor (a person under 18 years of age) derives legal residence from his father (or from his mother if the father is deceased), or, in the case of permanent separation of the parents, from the parent with whom the minor maintains his place of abode. A man or a woman may establish his or her residence.

A student who is a minor and remains in this state after his parent, who was a resident of California but has established residence elsewhere, shall be entitled to retain residence classification until one year after the student turns eighteen, thus enabling the student to establish residency, so long as continuous attendance is maintained at the University.

Nonresident students who are minors or 18 years of age and can evidence that they have been totally self-supporting through employment and actually present in California for the entire year immediately prior to the opening day of the quarter and have evidenced the intent to make the state their permanent home may be eligible for resident status.

Exemption from payment of the nonresident tuition fee is available to the natural or adopted child, stepchild or spouse who is a dependent of a member of the armed forces of the United States stationed in California on active duty; such residence classification may be maintained until the student has resided in the state the minimum time necessary to become a resident, so long as continuous attendance is maintained at the University. If the member of the armed forces is transferred on military orders to a place outside of the United States immediately after having been stationed on active duty in California, the student who is the natural or adopted child, stepchild or spouse dependent on the member of the military, is entitled to residence classification under conditions set forth above.

A student who is a member of the armed forces of the United States stationed in California on active duty, except a member of the armed forces assigned for educational purposes to a state-supported institution of higher education, shall be

entitled to residence classification until he has resided in the state the minimum time necessary to become a resident.

A student who is an adult alien is entitled to residence classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the laws of the United States; provided, however, that the student has had residence in California for more than one year after such admission prior to the residence determination date. A student who is a minor alien shall be entitled to residence classification if the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence in accordance with all applicable laws of the United States, provided that the parent has had residence in California for more than one year after acquiring such permanent residence prior to the residence determination date of the term for which the student proposes to attend the University.

Children of deceased public law enforcement or fire suppression employees, who were California residents, and who were killed in the course of law enforcement or fire suppression duties, may be entitled to residence classification.

A student in continuous full-time attendance at the University who had resident classification on March 7, 1973, shall not lose such classification as a result of the adoption of the uniform student residency law on which this catalog statement is based, until the attainment of the degree for which he or she is currently enrolled.

New and returning students are required to complete a Statement of Legal Residence, a form that is issued at the time of registration. Their status is determined by the Attorney in Residence Matters' Deputy who is located in the Registrar's Office.

The student is cautioned that this summation regarding residency determination is by no means a complete explanation of the law. The student should also note that changes may have been made in the rate of nonresident tuition and in the residence requirements between the time this catalog statement is published and the relevant residence determination date. As this catalog statement is written, regulations are in the process of adoption and will serve to implement the uniform residency determination law enacted in Statutes 1972, Chapter 1100 (AB 666) as adopted by the Regents. A copy of the Regents' regulations is available for inspection upon request being made to the Attorney in Residence Matters' Deputy in the Registrar's Office.

Those classified incorrectly as residents are subject to reclassification as non-residents and payment of all nonresident fees. If incorrect classification results from false or concealed facts, the student is subject to University discipline and is required to pay all back fees he would have been charged as a nonresident. Resident students who become nonresidents must immediately notify the Attorney in Residence Matters' Deputy.

Inquiries from prospective students regarding residence requirements for tuition purposes should be directed to the Attorney in Residence Matters, 590 University Hall, 2200 University Avenue, Berkeley, California 94720. No other University personnel are authorized to supply information relative to residence requirements for tuition purposes. Any student, following a final decision on

residence classification by the Attorney in Residence Matters' Deputy on the campus attended by the student, may make written appeal to the Attorney in Residence Matters at the above address within 120 calendar days of notification of the final decision by said Residence Deputy.

Housing

There is a variety of housing available for students enrolled at the University of California, Santa Barbara: University-owned campus residence halls and married student apartments; privately-owned room and board facilities, apartments, duplexes, sororities and fraternities. The University strongly recommends that all new students, particularly freshmen students, reside in University-owned residence halls. Group life in the residence halls provides leadership experiences, an opportunity for democratic living and contributes to the educational experience of the student. The University will refer students who wish to live off campus to privately-owned housing.

University-Owned On-Campus Housing Students who desire on-campus housing must first apply for entrance to the University through the Admissions Office. Priority for campus housing is based on date of application for housing and date of admission to UCSB; however, a contract is not offered until the Statement of Intention to Register has been returned to the Admissions Office. There are accommodations for 2,668 single students in residence halls on the campus. Santa Cruz Hall houses women students, Anacapa, San Nicolas, San Miguel, San Rafael and Santa Rosa Halls are coeducational. Residence halls students eat in De la Guerra, Ortega or Carrillo Dining Commons located near the residence halls. The price for three quarters (fall, winter and spring) for room and board (20 meals per week) is \$1,295. The majority of the rooms are for two students. Rooms are furnished with single beds, chests of drawers, chairs, bookcases and desks. Blankets, bedspreads, sheets, pillows, pillow cases, towels and study lamps are supplied by the students. The residence halls are closed during the Thanksgiving recess and between quarters. Applications are accepted for the following year beginning November 1 for Fall Quarter, July 1 for Winter Quarter and October 1 for Spring Quarter.

University-Owned Married Student Apartments There are two University-operated apartment complexes, consisting of 550 apartments, located near the campus for married students. Married graduate students must be full time registered students to be eligible for residence in these apartments, and undergraduate students must be registered for at least 12 units of work to be eligible. Vacancies are filled according to date of application and the following priority:

1. Married Graduate students
2. Married Undergraduate Students.
3. Single Graduate Students

These apartments are unfurnished except for a stove and refrigerator, and they rent for \$105-\$150 per month, including utilities. Licenses will be negotiated with tenants after application forms have been received by the Office of Housing Services as vacancies occur. Applications are available from the Office of Housing Services upon request.

Sororities & Fraternities The seven sororities and six fraternities own or lease houses or apartments near the campus and provide lodging and meals for their members. (See Section on Student Activities)

Privately Owned Housing Listings of privately owned accommodations are available to any student who desires to call in person at the Office of Housing Services. It is recommended that living arrangements be made by the student directly with the owner or manager rather than by mail. There should be a clear understanding by both parties, in writing, as to rental prices, intended length of stay, charges to be made during vacation periods, etc. A contract is a legal agreement and the terms of the contract are binding.

Most apartments are located in Isla Vista, adjacent to the west edge of the campus; in Goleta, two miles from the campus; and in Santa Barbara, ten miles from the campus. Public buses run on a regular schedule from Santa Barbara to the campus, and the fare is thirty-five cents each way.

Prices per person per academic year for room and board facilities range from \$1295 to \$1500, and apartments range from \$575 to \$1150 per student per academic year. Some quarterly contracts are offered.

Owners of Isla Vista housing listed with the Office of Housing Services must include in their contracts either a submission agreement to mediation by the Mediation Board in landlord/tenant disputes or submit a signed agreement to be on file in the Office of Housing Services. In addition, they must comply with federal, state and local laws, including those pertaining to building and safety codes. It is also required that before any housing can be posted in the Office of Housing Services, the owner must sign a non-discrimination card.

Locator files and bulletin boards are used by students to communicate and assist one another in finding apartments and compatible roommates or in sub-letting apartments.

Advice and more information about living accommodations may be obtained by writing to the Office of Housing Services, 1234 Administration Building, UCSB.

Parking

A parking fee of \$36 per year is charged for parking on campus, and all vehicles, including motorcycles (\$7.50), must be registered with the Parking Service Office. A fee of \$1.00 is charged to register a second car if owner is eligible. (A \$5.00 parking fee will be charged students attending the summer sessions only.) Vehicles are to be parked only in lots designated by permits. All undergraduate students living off campus within one mile of the campus boundary are not permitted to purchase parking permits for automobiles or motorcycles. Permit holders may not use a visitor parking zone nor can students and staff purchasing daily permits. Parking regulations and fees are subject to revision.

Complete information as to parking and vehicle operation may be obtained from the Parking Services Office, 1248 Administration Building. Students are urged to be informed relative to these matters.

Traffic violators may be cited to Municipal Court.

Financial Aid

Filing Dates January 15 is the last day to file for Scholarships for following academic year.

October 1–January 15 Filing dates for first priority consideration for all types of aid, including Summer Work-Study.

After January 16 Applicants cannot be considered for Scholarship but will be considered for all other financial aid programs for the fall, winter, and spring quarters of the ensuing academic year, subject to the availability of funds.

Applications are accepted throughout the year but after the January 15 priority filing date, awards are made subject to the availability of funds.

Applications for all programs of Financial Aid, including scholarships, must be supported by a confidential financial statement.

General Information Financial assistance in the form of loans, grants, work-study, and scholarships is available on an annual basis to qualified students at the University of California, Santa Barbara. Although parents and students are expected to make the maximum effort to cover college expenses, those students who would be unable to continue their education without supplemental resources will be given assistance according to their need as determined each year by College Scholarship Service criteria from the Parents' Confidential Statement. Funds for this purpose are made available by the Federal Government, the Board of Regents, various private organizations, and many interested individuals. Non-University or outside agency awards of moneys are considered as student assets in determining total need.

One basic application form, if submitted to the Office of Financial Aid before the January 15 deadline, entitles the qualified student who has established financial need to consideration for scholarships and other types of assistance. Current University of California, Santa Barbara, application forms may be obtained from the Office of Financial Aid, UCSB, after October 1. The necessary Parents' Confidential Statement must be submitted to College Scholarship Service one month prior to the application deadline. These forms may be secured from high school or college counselors or from the Office of Financial Aid at UCSB. Married or qualified self-supporting students will be required to submit an additional supplemental form, obtainable only from the Office of Financial Aid at UCSB. The mere desire to be independent of parents and reject their support cannot qualify the student for financial aid.

Awards are announced in mid-April and May. They take the form of a "package" made up of a combination of offers from the scholarship, loan, grant, and work-study funds, as the applicant's need requires. Awards may be adjusted at any time upon notice of receipt of non-University or outside agency funds.

Undergraduate Scholarships

Undergraduate scholarships are awarded competitively on the basis of achievement, need as determined by College Scholarship Service criteria, and available funds. All scholarships must be applied for each year. Transcripts of

records, sent directly to the Office of Financial Aid, are required of entering freshmen and transfer students. Included in the scholarship group are:

The Regents Scholarships These awards are based solely on academic excellence and exceptional promise. Students are eligible to apply upon graduation from high school or completion of the college sophomore year. The term of appointment, subject to annual review, is four years for students entering from high school, and two years for college sophomores. Awards may be honorary in nature or may be accompanied by a stipend covering the scholar's need as determined by College Scholarship Service criteria. At the time of original appointment, Regent Scholars receive an honorarium of \$100, regardless of financial need. Regents Scholarship applicants not wishing to file a Parents' Confidential Statement should so indicate on the application form.

President's Scholarships These one-year awards are made annually to entering and continuing students. Upon application, a student may be reappointed a President's Scholar, but he may not hold this award for more than four years. President's Scholarships are granted on the basis of achievement, financial need, and promise. The maximum stipend is \$500; however, these scholarships may be supplemented by other forms of financial aid to meet a student's established need.

Chancellor's Scholarships Students demonstrating high academic potential may be considered for a \$100 Honorarium which is given by the Chancellor of the University of California, Santa Barbara. Since outstanding academic potential is the only criterion for a Chancellor's award, students wishing to apply to this program need only submit a Financial Aid application, transcripts and recommendations.

Community College Transfer Scholarships A limited number of scholarships will be awarded to community college transfer students who have established financial need and have completed 56 or more transferable semester credits. These scholarships are awarded for two years with renewal for the second year subject to review. The maximum stipend is \$800; however, these scholarships may be supplemented by other forms of Financial Aid to meet a recipient's established need.

Other Scholarships In addition to the above, other UCSB Scholarships are awarded annually by the Chancellor to Undergraduate students. With few exceptions, they are granted on the basis of need and high academic achievement. For the 1973-74 Academic Year, these awards range from \$100 to \$1000 and are supplemented by other forms of Financial Aid to meet the student's established need. The following scholarships, made possible through the contributions and cooperation of individuals and private organizations, are generally of two types:

a) Local gifts and endowments (available only to the UCSB campus). In 1972-73, this group contributed as follows:

California Congress of Parents and Teachers, Inc.	\$ 3,000
John and Ina Therese Campbell Scholarship Fund	55,000
William C. Matthews and Florence W. Matthews Fund.....	6,000
Isabelle Price Memorial Scholarship Fund.....	4,465

John S. Edwards Scholarship Fund.....	350
Ralph W. Church Scholarship Fund.....	12,000
Kevin P. Moran Memorial Scholarship Fund.....	1,150
Floralyn Cadwell Conway Scholarship and Loan.....	300
Samuel B. Mosher Scholarship Fund.....	5,500
Clarence Phelps Memorial Fund.....	125
Pierre De Latte Scholarship Fund.....	500
Margaret H. Blaney Scholarship Fund.....	3,000
Marsley S. Buckley Scholarship Fund.....	150
John Randolph Haynes and Dora Haynes Foundation	2,800
Hazel S. Lagersen Scholarships.....	952
Arthur H. Tucker Scholarship Fund	400
Santa Barbara Scholarship Foundation.....	4,600
UCSB Alumni Association.....	12,237
Mildred Wright Memorial Scholarship (Soroptimists Club of Santa Barbara)	500
General Scholarship Fund.....	3,713
Matilda N. Fowler Scholarship Fund.....	818

b) University-wide endowment funds, some of which are rotating and are not necessarily received each year. In 1972-1973, UCSB students received scholarship monies from:

The Sarah M. Armstrong Scholarship Fund
 Caroline H. Clow Scholarship Fund
 Brython P. Davis Scholarship Fund
 Leon R. Goodman Scholarship Fund
 Mary E. Jaskey Scholarship Fund
 Eva A. Josephi Scholarship Fund
 Walter Loewry Scholarship Fund
 E. Coke Hill Scholarship Fund
 John A. W. Miller Scholarship Fund
 Mary Pillat Scholarship Fund
 Werner R. Scott Scholarship Fund
 Mabel Wilson Richards Scholarship Fund
 Emma M. and Rudolph Tausig Fund
 Pease Barker Scholarship Fund
 Milton Phillips Scholarship Fund

In addition to the above named scholarship funds, several local agencies and organizations cooperate with the Office of Financial Aid in providing financial assistance to qualifying UCSB students in the form of grants, long-term loans, or scholarships. During the 1972-73 academic year, this group included the Santa Barbara Scholarship Foundation, Santa Barbara Foundation, American Association of University Women, Santa Maria Alumni Association, Santa Barbara Alumni Association of Delta Delta Delta Sorority, and the Alexander Bee Scholarship Loan Fund.

The Office of Financial Aid also maintains an Agency Scholarship department through which private individuals and outside agencies distribute scholarship or loan funds to their selected recipients.

Graduate Scholarships

A few graduate scholarships offered through the Office of Financial Aid are available to Senior students planning to teach or work in the California Public Schools. Applicants must apply for these scholarships before the January 15th deadline and must demonstrate financial need.

Graduate students interested in the UCSB Graduate Fellowship Program should contact the Graduate Division for further information.

Other Financial Aid

Other types of financial aid are available to qualifying graduate and undergraduate students according to established need and the application deadlines stated above. The several programs include:

UC Grants These awards are made in varying amounts to graduates and undergraduates who establish substantial need.

Improved Access Grant The Regents of the University have made available funding of Grants-in-Aid averaging not more than \$700 per Academic Year to eligible Undergraduate students who have transferred to the University with 84 units (56 semester units) of acceptable transfer work in a California Community College or other accredited collegiate institution other than the University of California. A cumulative grade point average of not less than 2.0 is required and emphasis is given to Community College transfers.

Educational Fee Grant The Regents have also provided funds with which eligible applicants may be awarded a maximum of \$100 per quarter for the first three consecutive quarters of attendance. To qualify, a student must be a resident of California and an Undergraduate in his first year of attendance at the University of California.

Educational Opportunity Grants (EOG) This federal program provides funds for undergraduate students who have exceptional financial need and show evidence of academic or creative promise. Grants range from \$200 to \$1,000 a year, are renewable for four years for full-time undergraduates in good standing, and must be awarded in combination with other financial aids.

Associated Student Emergency Grant Through funds provided by the Associated Students, these small grants are made available to meet unexpected, unanticipated expenses. A student need not be a Financial Aid recipient to apply, but must be an enrolled Undergraduate student.

The Associated Students also provide funds for Grants-in-Aid to students with proven financial need.

Work-Study Program An eligible student may be provided either an on-campus or off-campus job with a participating non-profit agency which would provide up to 15 hours per week employment during the school year and 40 hours per week during vacation periods. Priority must be given to students from low-income families who can make little, if any, contribution toward college expenses.

National Direct Student Loans (NDSL) Enrolled students who are citizens or permanent residents of the United States may receive assistance according to need from these federal funds. The loans are interest free as long as the borrower remains enrolled as a student, and carry simple interest at 3 percent during the repayment period which may be extended over ten years' time.

Federally Insured Student Loans This program enables students to borrow from participating lending institutions to help pay educational costs while attending

school. It was established to meet the needs of middle- and upper-income families who do not qualify for the other programs. It provides long-term loans for qualified borrowers, interest accrued while in school is paid by the U. S. Government. Borrowers must be citizens or permanent residents of the United States and be enrolled students in good standing or have been accepted for enrollment.

Educational Fee Deferment Loan Beginning with the 1970-71 academic year the Regents of the University of California established the Educational Fee. Students who are legal residents of the State of California and have demonstrated financial need may defer payment of this fee by accepting an obligation to repay after completion of their higher education under terms similar to those of the National Defense Student Loan; i.e., repayment at 3% interest beginning nine months after termination of enrollment.

Registration Fee Loan Both Graduates and Undergraduates who are not receiving financial assistance from the Office of Financial Aid may apply for this loan. To alleviate a financial emergency, an eligible student may borrow up to \$600 of his assessed fees, provided an identified source of repayment is available. Repayment must be made by a specified date during the quarter and a \$5.00 service charge is applied to each loan.

Teaching Assistant Loan Students enrolled in full-time Graduate Programs at UCSB who hold positions (for no more than one-half time) as teaching assistants, or the various titles related by function and financial circumstance to teaching assistants (excluding readers), may borrow up to one month's salary during the period between their arrival on campus (not to exceed 30 days prior to the opening of classes) and receipt of their first salary check.

Emergency and Short-Term Loans Students in good standing who are having financial emergencies may inquire at the Office of Financial Aid about short-term loans. Loans are available from the following funds:

- Marvin M. Appel Scholarship Fund
- Avery-Clay Memorial Loan Fund
- California Federation of Women's Clubs Loan Fund
- Mary L. Cheadle Emergency Loan Fund for Foreign Students
- Lawrence E. Chenoweth Memorial Loan Fund
- John Lalia Conway and Floralyn Cadwell Conway Scholarship Fund
- Ericson-Werner Memorial Loan Fund
- David Gray, Jr. Loan Fund
- Elias Hick and Edward Barnes Jones Foreign Students Loan Fund
- Willis Edwin Leonard Memorial Loan Fund
- Los Rancheros Pobres Loan Fund
- Steve McNally Memorial Loan Fund
- Ednah Rich Morse Loan Fund
- Upton S. Palmer Loan Fund
- Dr. Paul Perigord Loan Fund
- Pioneer Memorial Student Loan Fund
- Isabelle Price Memorial Loan Fund
- Regents Loan Fund
- Santa Barbara County Federation of Women's Clubs Foreign Students Loan Fund
- Santa Barbara Senior Loan Fund

Warren E. Schutt Memorial Loan Fund
 Laura E. Settle California Retired Teachers Association Loan Fund
 Yves and Manon Surcouf Memorial Loan Fund
 Jody Thoele Memorial Fund
 John H. Tokuyama Memorial Loan Fund
 Anna Vishanoff Memorial Loan Fund
 Ronald Joe West Memorial Loan Fund

Associated Student Loans Enrolled undergraduate students may borrow small sums on a short-term basis from the Associated Students. Application should be made at the Associated Student Business Office located in the University Center, (3rd floor)

Alumni Association Loans Enrolled undergraduate and graduate students may borrow from four loan funds. Three funds provide \$25.00 loans for a period of 45 days. A \$.25 administrative fee is charged. The only requirement for receiving one of these loans is a valid registration card.

A fourth fund provides up to \$100.00 without fee or interest charges. These loans are for undergraduates only. The requirement for this loan is that aid be necessary for the continuation of one's education.

Law Enforcement Education Program Loans and/or grants are available to qualifying in- or pre-service local, state, or federal law enforcement officers enrolled on a full or part-time basis. Further information is available from the Office of Financial Aid.

State and Departmental Awards

The following financial aid programs require separate and special applications. Information about the programs and application forms may be obtained from the Office of Financial Aid at UCSB, high school and community college counselors, or the academic department involved.

California State Scholarships These State awards may be held concurrently with a University award, with the approval of the California State Scholarship and Loan Commission.

California Opportunity Grants These grants are made available through the California State Scholarship and Loan Commission.

Speech and Hearing Fellowships A limited number of federally sponsored fellowships are available to advanced students majoring in speech and hearing. One fellowship is available for work with emotionally disturbed children. Students interested in and qualifying for such assistance should contact the departmental office of this major field of study.

U. S. Army R.O.T.C. Scholarship Program Army ROTC Scholarships are available to selected applicants. These scholarships pay all costs for tuition, registration and laboratory fees, expenses for books, and \$100 a month cash to the student. Full 4-year scholarships are offered to high school Seniors selected in a nationwide competition. A limited number of three, two and one-year scholarships are available to outstanding students enrolled in the ROTC program at the university level. Upon graduation the recipient must serve four years in the US Army and accept a Regular Army Commission if it is offered.

Applicants and those interested in further information should come to the Military Science Department, Building 419, at the Campus, or write for an informational packet.

Prizes and Awards

Through the generosity of friends of the University, prizes are available to students in accordance with conditions laid down by the donors. Information about competitions will be published from time to time in the campus newspaper.

Academic Excellence in Psychology
 Alliance Francaise Medal
 Alumni Association Awards
 Alpha Lambda Delta Book Award
 Art Affiliates Fellowship
 Stuart L. Bernath Undergraduate Prize (History)
 Edwin Corle Memorial Undergraduate and Graduate Book Collection Contest
 Awards

Pierre Delattre Memorial Fellowship
 Hermione Chevallier Prize in French Literature
 Dutch Books
 William H. Ellison Graduate Prize (History)
 Genevieve Haight Memorial Award
 Intercollegiate Athletics Scholarship Award
 Junior Prize in Speech and Hearing
 Willard L. McRary Memorial Chemistry Prize
 Mortar Board Award
 Music Affiliates Awards
 The Arnold Nordsieck Memorial Prize in Physics
 Outstanding Graduating Seniors by Department
 Outstanding Greek Man
 Outstanding Greek Woman
 Outstanding Junior in Chemical Engineering
 Outstanding Sophomore in Chemical Engineering
 Outstanding Speaker Award
 Outstanding Teacher (Mechanical Engineering)
 Francis Price Hispanic Studies Award
 Research Promise in Psychology
 Warren E. Schutt Memorial Award
 Aida and Philip Siff Prize (Philosophy)
 Aida and Philip Siff Purchase Art Award
 Thomas More Storke Medal for Excellence
 University Service Awards
 Women's Physical Education Club Award
 C. Douglas Woodhouse Award in Geology
 The Affiliates Trophy to Superior R.O.T.C. Cadets
 The Military Order of World Wars Award to Outstanding Senior R.O.T.C. Cadet
 The Society of Colonial Wars Award to the Outstanding Junior or Senior R.O.T.C. Cadet for Leadership and Scholastic Excellence
 The National Sojourners Americanism Award to the Outstanding R.O.T.C. Cadet as a University-citizen

The Santa Barbara Retired Officers Club Awards for Outstanding R.O.T.C. Cadet Leadership

The Daughters of the American Revolution Gold Medal to the Outstanding Senior R.O.T.C. Cadet for academic and military achievement

The American Legion Awards for General Military and General Scholastic Excellence

The Reserve Officers' Association Gold, Silver, and Bronze Medals for R.O.T.C. Cadets demonstrating excellence in leadership, character, and academics

The Association of the United States Army Medal for Outstanding Military and Academic Achievement by a Junior R.O.T.C. Cadet

The Association of the United States Army Award for Excellence in Military History by a sophomore R.O.T.C. Cadet

The Sons of the American Revolution R.O.T.C. Medal to the first-year R.O.T.C. Cadet demonstrating all-around military and scholastic excellence

The Roy E. Mayo Scholarship to any R.O.T.C. Cadet for Military and Academic Excellence and demonstrated financial need

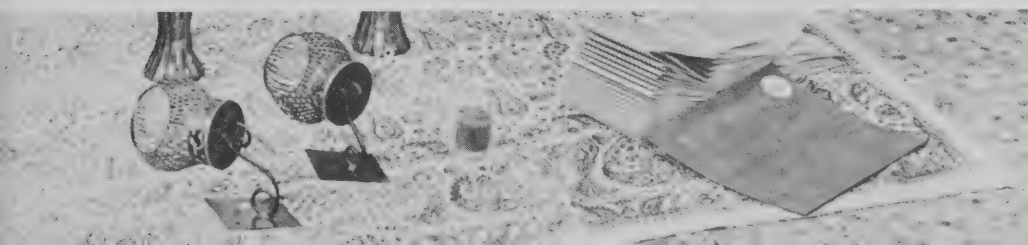
The Friends of the R.O.T.C. scholarship to any R.O.T.C. Cadet demonstrating academic excellence, military merit, and financial need



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Student Services and Activities

Academic Advising

Many sources of academic assistance are available to students on campus. These include the deans of the colleges who are responsible for the general curricula, the advisers in the college offices who are familiar with the various degree requirements, with available majors, and with academic matters in general, and the faculty advisers in the major fields. In addition, certain college advisers and faculty members serve as advisers to students who are interested in applying to various professional schools such as Business Administration, Dentistry, Education, Law, Medical Technology, Nursing, Physical Therapy, Special Education, Speech Therapy, and Veterinary Medicine. (See the *Letters and Science Announcement* for details.)

Pre-Medical Counseling The pre-medical advisory committee offers general counseling to students who wish to pursue a career in medicine. Information about entrance requirements of various medical schools and the timetable for applications is available from the committee. The committee also assists students with their selection of medical schools and in the preparation of applications. For further information inquire at the offices of the Dean of the College of Letters and Science or the Department of Biological Sciences.

Credential Counseling Credential counseling is available in three locations on campus. First, the Education Advising Office on the first floor of Phelps Hall provides advice regarding the teaching credential programs in Education at UCSB in accordance with credential requirements specified by the Commission for Teacher Preparation and Licensing in Sacramento. Due to recent changes in the credential requirements, weekly meetings are held in this Office for students interested in obtaining a credential at UCSB.

Second, the College of Letters and Science, on the second floor of the Administration Building, conducts weekly meetings for students interested in credential programs at *other* colleges and universities.

Third, the Placement Center in Building 427 holds weekly meetings for students interested in job opportunities for teachers and in the qualifications needed to obtain these jobs.

Dean of Students Office

The Dean of Students Office is one of the principal student service agencies on campus. It is located on the third floor of South Hall, but there are also offices in the University Center (Student Activities) and Building 434 (Foreign Student Office).

Students needing general guidance in personal problems, official signature verification on a "Good Student Conduct" insurance form, verification of unavoidable absence from academic commitments, recommendations to graduate or professional schools, can obtain assistance in the Dean of Students Office. Special services for physically handicapped students, veterans, and athletes are also provided.

Foreign Student Counseling The Dean of Foreign Students and his staff are available to assist foreign students in all matters pertaining to their attendance at the University. It is required that every student from another country upon arrival at the University must report to the Foreign Student Office, Building 434, with passport, and visa documents. The building also contains the Cafe Interim, an informal meeting place for all foreign students on campus. Assistance to exchange students is also given by the staff of the Education Abroad Program, whose University-wide offices are located on the Santa Barbara campus, on the first floor of South Hall.

Veterans and ROTC Counseling Veterans and children of disabled or deceased veterans eligible for Federal educational benefits should obtain an authorization certificate from the United States Veterans Administration Regional Office at 49 Fourth Street, San Francisco 94103, or 11000 Wilshire Boulevard, Los Angeles, California 90024. This certificate should be filed at the time of registration with the Dean of Students, 3607 South Hall. State veterans' dependents may obtain authorization from the State Department of Veterans Affairs, Division of Educational Assistance, P.O. Box 1559 Sacramento 95807; or 350 McAllister Street, San Francisco 94102; or 621 North La Brea, Inglewood 90309. State veterans' dependents will report to the Office of the Dean of Students, where they may obtain deferment of fees.

All veterans and veterans' dependents should be prepared to maintain themselves financially for a period of from 60 to 75 days pending receipt of their first subsistence checks.

The Morrill Act of July 2, 1862, creating the system of land-grant institutions, of which the University of California is one, required those institutions to offer military training courses. Military training at the University of California is offered on a voluntary and selected basis. Both basic and advanced courses in ROTC are given in the Department of Military Science. The United States government furnishes uniforms and equipment for students formally enrolled in ROTC. For details see Military Science listing under Courses of Instruction.

Selective Service Counseling Matters relating to the deferment of students eligible under Selective Service are handled by the Office of the Dean of Students, on the third floor of South Hall. Certification regarding enrollment and other pertinent information will be submitted to the student's Selective Service Board only upon the student's request.

Orientation Programs A voluntary summer program of orientation, testing, counseling, and preenrollment is conducted jointly by the Counseling Center, the Dean of the College of Letters and Science, and the Dean of Students. All Freshmen and their parents are invited to attend one of a series of two-day orientation programs designed to acquaint participants with the campus and reduce the confusion attendant with beginning college. Special sessions are offered also for transfer students. Participants live in University residence halls during the program.

New freshmen who are not able to participate in one of the special orientation programs, as well as all transfer students, are encouraged to attend the academic advising sessions offered by the College of Letters and Science dur-

ing the summer. Information regarding these advising groups will be included in the Admissions materials. Students in the College of Engineering and the College of Creative Studies may receive similar advising in their own college offices. All new and prospective students who would like to visit the campus may consult the Office of Relations with Schools, the Office of Public Information or the Office of the Dean of Students for assistance in arranging such a visit.

Many orientation activities are held on campus during registration week in the fall. The *Schedule of Classes* lists meetings for which attendance is required. In addition, a student organized program, Rebyson, coordinates and publicizes a variety of programs to acquaint the new student with campus and community activities and to assist him in adjusting to University life. Other orientation activities are scheduled each quarter, sponsored either by the Associated Students or the Office of the Dean of Students. Specific orientation programs are offered for particular groups such as Foreign Students and Educational Opportunity Students. For information, contact the directors of these programs.

Counseling Center

The primary purpose of the Counseling Center is to afford students a chance to grow as total persons—emotionally and academically. The varied services offered give students an opportunity to explore their aptitudes and interests in relation to their work at the University and to discuss problems of personal development which may be sources of distress or interference with their effectiveness as students. Staffed by professional as well as paraprofessional people, the Center provides comprehensive, confidential personal services to all registered students without charge. Testing and consultation services are also provided.

Specialized services are provided at each of these Centers:

Main Counseling Center (Building 478) All educational/vocational counseling takes place here as well as most of the personal counseling. Also housed here is the Career Information Room which contains a wealth of information on different careers and has catalogs of many other undergraduate and graduate institutions. Open 8 to 5 daily.

Isla Vista Human Relations Center (6586-A Madrid) This is an informal drop-in service to be of special usefulness to those who live in Isla Vista. The Center is concerned with community development, fostering a supportive social climate, and sensitizing the community to human needs. Professional as well as peer counselors are available.

Reading-Study Center (Building 421) Here individual and group help is offered in the development of effective learning skills both in basic habits of reading and written communication, and in specific subject matter.

Other Services

Social Security Students who may qualify for benefits under the Social Security Act should apply for benefits at the Social Security office. Information and certifications regarding University enrollment are available in the Registrar's Office. Students receiving benefits are reminded to maintain a full time study load. Minimum full time study load per quarter is 12 units.

Vocational Rehabilitation Services Students who have a physical, emotional, or other disability which handicaps them vocationally may be eligible for the services of the State Department of Rehabilitation. These services include vocational counseling and guidance, training with payment of costs such as books, fees, tuition, etc.) and job placement. Under certain circumstances students may also qualify for help with medical needs, living expenses and transportation.

Students who believe they may qualify for assistance should contact the State Department of Rehabilitation Office at the Santa Barbara District Office, 411 East Canon Perdido Street, Santa Barbara 93101; phone number (805) 963-4351.

Dean Robert Evans in the Dean of Students' Office will assist physically handicapped students who have any particular problem with class schedules, parking, or housing, and will assist blind students in obtaining tape recorders, readers, etc.

Speech and Hearing Center Staffed by professionally certified speech pathologists, audiologists and student clinicians in advanced stages of training. Speech and hearing evaluations and remediation when indicated for disorders of articulation, language, dysfluency, voice quality, hearing loss, etc. Medical referrals where appropriate. No fees.

Child Care Child Care for student, faculty, and staff children from three months to five years is available at the University Community Child Care Center on the West Campus. Information can be obtained by calling 961-3665, or through the Dean of Students Office in South Hall, 3607.

Ombudsman The campus ombudsman, whose office is in South Hall 3505, serves as a troubleshooter for any student, faculty or administrative staff person whose problem has not been successfully resolved by other campus agencies. The ombudsman, who has served since 1970, has successfully resolved numerous difficulties both major and minor.

Student Health Service

A Student Health Service is provided on campus to assist students in maintaining optimum physical and mental health so that they may take full advantage of their educational opportunities. Payment of the quarter Registration Fee, plus completion of required Medical Evaluation procedures if he is a new student or is returning after an absence of one year or more, entitles the student—as long as he remains registered and seven days thereafter—to the following services on a prepaid basis:

1. Physician and nurse consultation.
2. Medications and dressings administered by physician or nurse.
3. Laboratory, X-ray, and bed patient care as ordered by a staff physician.

Certain other services are provided at additional charge:

1. Special laboratory, X-ray and other diagnostic procedures.
2. Antigen injections, special medications and immunizations.
3. Transfer of medical information to colleges outside the U.C. system, insurance agencies, attorneys, etc.
4. Special medical examinations.

5. Prescriptions filled in the Student Health Service Pharmacy.
6. Dental Clinic.
7. Conception Counseling Clinic.
8. Physical therapy procedures.

Medical Evaluation Procedures A new entering student or a student re-entering after an absence from any of the U.C. campuses for one year or more, is required to submit:

1. A completed Medical History (UCSBSH Form 1A)
2. A report of a Tuberculin skin test or chest X-ray performed within the past 12 months.

It is strongly recommended that each student have a physical examination performed by his personal physician within one year prior to the first day of classes. (UCSBSH Form 1B). This is especially important if he plans to participate in athletic activities or to enter the teaching field.

When his records are received at the UCSB Student Health Service they will be reviewed, and if there are problem areas needing clarification he will be requested to report to the Health Service.

Supplementary Insurance for Off-Campus Care The Student Health Service program on campus is supplemented by an insurance plan which provides benefits for certain medical expenses which cannot be taken care of at the Student Health Service. In case of injury or illness, the student should, whenever possible, first report to the campus Student Health Service. A descriptive brochure and related forms will be furnished to prospective students prior to payment of fees. Participation in the plan is required of all registered students unless the waiver form provided is signed and returned with your other registration papers at the time of payment of registration fees.

Health Insurance Requirement—For Foreign Students The acquisition of Student Accident and Health Insurance is a condition of registration at this University for all foreign students except those in the United States on immigrant (Permanent Resident) visa. Information about the Student Accident and Health Insurance Plan sponsored by the Associated Students will be sent to the foreign student with the application for admission. You will be required to pay the insurance premium at the time of registration. In addition foreign students must also purchase insurance for any family members who accompany them to Santa Barbara.

Placement Center

Student Part-Time and Summer Employment It is expected that a student devote the major part of his time to his studies. Although many students plan to earn part or all of their expenses, it is strongly advised that students attempt no outside employment until they have made satisfactory adjustments to the demands of their academic work and of university life. Some students are able to carry an average program and from ten to twenty hours of outside work per week without jeopardizing scholarship, health, or participation in college activities. *It is recommended that lowerclassmen plan to work no more than fifteen hours a week.* Outside employment should be reduced or discontinued if it interferes

with academic work, since the student's first responsibility is to his studies. Applications for part-time work are made through the Placement Center, second floor, Bldg. 427.

A student should not arrange for employment until his academic program is planned for the quarter. If his program does not permit regular working hours throughout the quarter, the student should seek employment of shorter duration or irregular hours which may be fitted into his program. There are part-time jobs available for women and men; however, it is not always possible at the time of registration to place each student desiring employment.

Information for summer employment at the local level, as well as nationally and internationally, is available in the Placement Center. Students interested are urged to register during the fall and winter quarters.

Educational Career Services The Educational Career Services assists undergraduate and graduate students and former students in planning careers in the field of education, and in locating teaching, counseling, administrative, supervisory and research positions in universities, colleges, junior colleges, high schools and elementary schools. Attention is given to initial employment and subsequent relocation and promotion.

The Educational Career Services registers candidates and assists them in developing information into personal files concerning the background, training, and professional experience in order to match qualifications of candidates with specifications of available positions. Placement Advisers counsel candidates, communicate with employers, arrange on-campus interviews, and notify candidates of available positions for which they are qualified, considering former students as well as those currently completing credential or degree requirements.

All candidates for positions are expected to reimburse the Placement Center for telephone messages and telegrams found necessary by Placement Advisers in transactions in behalf of the students. The Educational Career Services is located in Building 427.

Business and Technical Career Services Through the facilities of the Business and Technical Career Services, a staff of professional advisers is available for consultation and guidance on career planning and placement, as well as resumé construction, letter writing and interviewing.

The Placement Center maintains a library of career and employment opportunity information useful for undergraduates as well as graduating seniors. Students are encouraged to consult this material as they make decisions relative to their academic programs and eventual career objectives.

Candidates for a degree, graduate or undergraduate, are urged to register as soon as possible in their last year in order that they may be referred well in advance of graduation to employers from business, industry and government. Such referrals may involve off-campus interviews at employers regional and home offices or on-campus interviews with employer representatives who visit the Placement Center annually from October through May.

This service is available to all regularly enrolled students, and alumni of the University who are unemployed or who desire career relocation. The Business and Technical Career Services is located in Building 427.

The University Center

The University Center and Campus Post Office The University Center is the focal point for the out-of-class life of the campus. It serves as a gathering place for students, faculty, alumni, affiliates, and townspeople. The Center provides many services to the campus community which gather around a program designed to influence the cultural and intellectual lives of students. The Center offers every student the opportunity to participate in and enjoy a wide variety of activities. These range from educational, social, and recreational to service projects, allowing each student an opportunity to develop qualities of responsibility and leadership in helping to plan and implement them. Within the Center are located the Campus Bookstore, a coffee shop and dining room, music listening rooms, art studios, conference rooms, lounges, program areas, and other facilities incident to student activities on the campus.

Any student who is not living in a dormitory room on campus may rent the locked mail boxes available in the University Branch Post Office located in the University Center. Application for a box may be made prior to enrollment by applying to the University Branch Post Office, Santa Barbara, California 93107. Rates are: 50¢ per academic quarter or \$2.00 per year (includes summer months). Students residing in on-campus residence halls will have a locked mail box preassigned to them in the University Branch Post Office. This mail box will be assigned in accordance with the room assignments in the Residence Halls. Any students who move from one room to another will retain their assigned P. O. Box for the remainder of the school year.

Students living off-campus will have their mail sent directly to their residence in which case they should use the proper street address, city and zip code.

Services available at UCSB Branch Post Office include selling stamps, money orders; mailing insured and other packages and handling all kinds of mail.

The Associated Students

The undergraduate student self-government is organized and administered by the Associated Students. All undergraduates hold membership by virtue of paying the required ASUCSB membership fee at registration. The organization consists of the Associated Students Legislative Council which directs the work of the many committees and boards. It provides a spectrum of cultural and social activities which contribute to the enrichment of the undergraduate's college experience.

Members are entitled to participate in the affairs of the Associated Students, and to a subscription to the campus newspaper. Other benefits include reduced admissions to athletic, dramatic, social, and similar events which are part of the program of the Associated Students.

Eligibility for Office in Student Organizations In order to be a candidate for office, or to maintain an office, a student must have a total scholastic average of at least a grade C, and must have earned at least a grade C average the previous quarter and carry a program of no less than 12 units.

Graduate Students Association

The Graduate Students Association serves "to represent the opinions and interests of the graduate students." A council, generally composed of fifty

elected representatives from the graduate departments, and an executive committee, made up of five officers chosen from the counsel, holding monthly meetings, open to any graduate student.

To ensure that graduate interests are voiced and heard, the Graduate Students Association places members on many of the important committees directing University affairs and publishes a newsletter, *The Grad Bag*, which besides publicizing the organization's views, disseminates information of interest to graduate students.

The GSA office is located in the Graduate Tower, South Hall, 1411, telephone 961-3824. The staff of the GSA welcomes requests for further information and hopes that any graduate student needing its services will feel free to telephone or visit the office.

Student Activities

Student Organizations The major student organizations include the Associated Students, Recreational and departmental clubs.

In addition to these, the University of California, Santa Barbara, offers opportunity for membership in many national honorary professional fraternities, national and local service organizations, and special-interest groups. Students interested in finding out about existing groups or in forming new groups should contact the Campus Activities Office, University Center, 3137.

Community Service Projects Through its Community Affairs Board, the Associated Students provides opportunities for students to offer volunteer services in schools, mental health programs, prisons, Indian reservations, and senior citizen's homes.

Social and Cultural Activities A wide variety of other activities are available including a student newspaper, FM-Radio station, yearbook, forensics, dance, music, and choral groups, films, lectures and concerts.

Intercollegiate Athletics UCSB offers a varied intercollegiate athletic program with twelve men's varsity sports and five women's sports. The men's intercollegiate teams include cross country, water polo, soccer, basketball, swimming, gymnastics, wrestling, volleyball, track and field, baseball, golf and tennis. Women can participate in tennis, volleyball, swimming, gymnastics or basketball. All men's varsity teams compete in the National Collegiate Athletic Association University Division.

Recreation The Recreation Department provides many leisure services for UCSB students, faculty, staff and some local community residents. These services include the use of two campus pools, two gyms, a gymnastics area, weight room, Storke Tower tours, pottery room, weaving studio, and photo lab plus horseback riding on the beach and recreational sailing. Non-credit classes such as banjo, tennis and pottery are offered at the lowest possible cost. An equipment room is available for equipment rental at nominal fees. The Recreational Department also assists students in organizing and administering clubs and teams which compete on intercollegiate levels. Ski trips and scuba dives are set up during the appropriate seasons, with special programming during the summer months.

Intramurals Intramural sports provides a wide range of activities for all students whose abilities range from super athlete to fun-loving participant. In-

cluded in the more than seventy sports which Intramurals offers are football, basketball, softball, soccer, rugby, volleyball, tennis, swimming and diving, cycling, badminton, golf, track and field, waterpolo, and, yes, even jousting. Coed sports, such as football, volleyball, and innertube waterpolo, are the most popular among Intramural participants.

Honorary Academic Organizations

Alpha Lambda Delta (Freshman Women)

Delta Sigma Rho-Tau Kappa Alpha
(Forensics)

Kappa Delta Pi

Mu Phi Epsilon (Women's Music)

Omicron Delta Epsilon (Economics)

Phi Alpha Theta (History)

Phi Beta Kappa

Pi Kappa Lambda (Music)

Pi Sigma Alpha (Political Science)

Honorary Service Organizations

Block C (Lettermen)

Blue Key National (Upperclassmen)

Chimes (Junior Women)

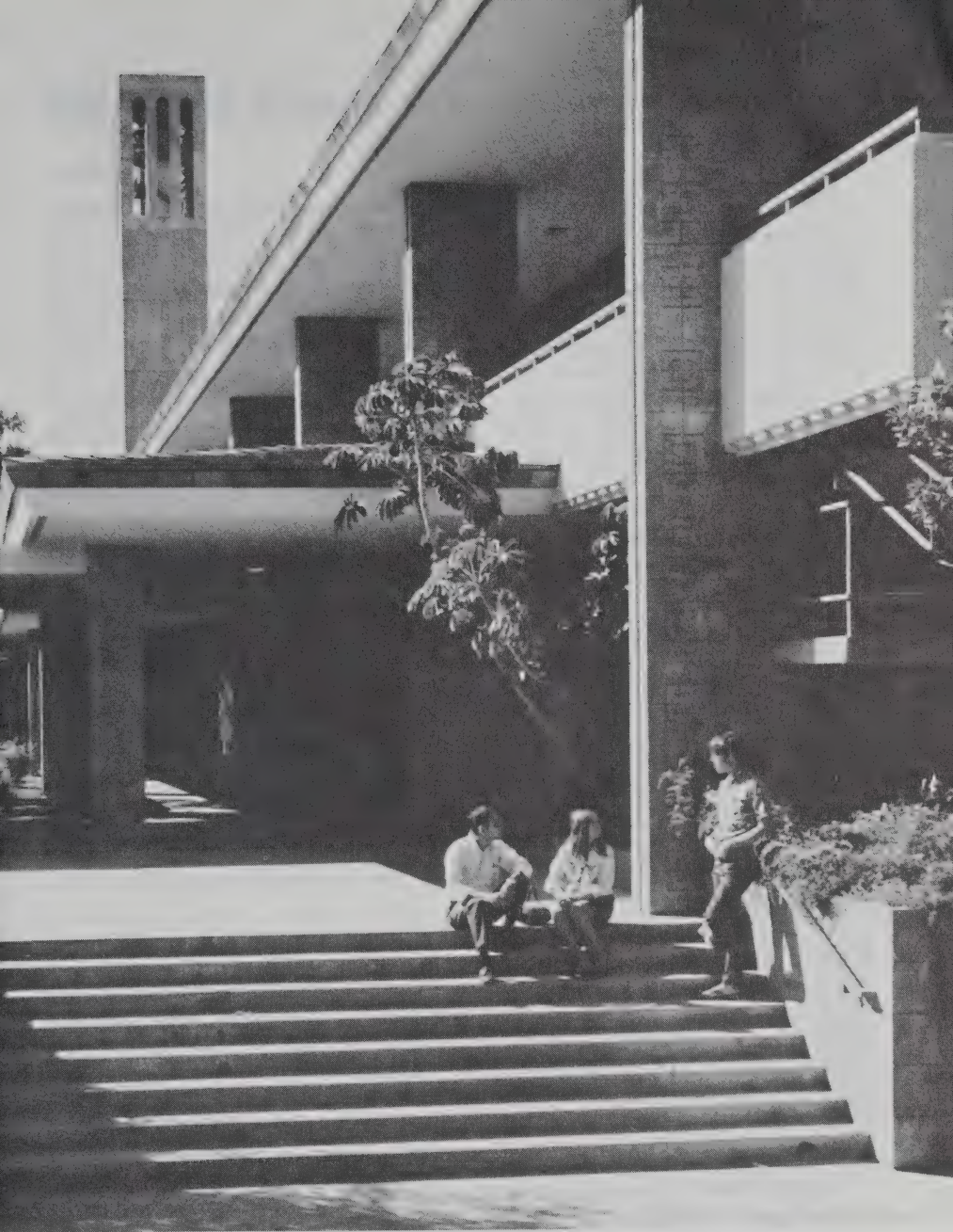
Mortar Board (Senior Women)

Honey Bears (Women's Hostess Group)

Alpha Phi Omega (National Service
Fraternity)

Residence Hall Organizations Students in University-owned residence halls are organized in living groups and conduct social, recreational, and cultural activities for their members. All these organizations are integrated by means of a Residence Hall Association. Student government at this level is coordinated with the Associated Students through participation of Residence Halls Association Legislature members on appropriate Associated Student committees and boards.

Fraternities and Sororities There are six national fraternities and seven national sororities at UCSB with membership of 40 to 50 students in each house. Greek Chapters offer small group living, social activities, and opportunities for involvement in academic and community programs. Formal rush activities are held at the beginning of fall and spring quarters. For further information contact the Dean of Students Office.



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General Regulations

Registration

Every UCSB student must register at the beginning of each quarter. The registration process includes payment of fees, enrollment in courses, and the filing with the Registrar of the completed registration forms at a specific time. The details of this procedure are contained in the *Schedule of Classes* which is available approximately two months before the beginning of each quarter. The *Schedule of Classes* may be purchased at the Campus Bookstore and is mailed to all new and returning students.

A student may not register for any quarter if he has outstanding financial obligations to the University unless those obligations have been officially extended by the Business and Finance Office or by the Dean of Students.

No student who is subject to academic disqualification may register at the University until he has met any conditions that the dean of his college may have prescribed and until the dean has reinstated him on probationary status.

A graduate student in good standing must register each quarter with the Registrar of his campus until he has completed all requirements for the degree for which he is working. Failure to register or to petition for an official leave of absence will constitute presumptive evidence that he has withdrawn from the Graduate Division. Graduate students who fail to register, and who wish to resume their graduate studies, will be required to file reapplication forms and pay a \$20 fee. However such readmission is not guaranteed. Further information may be obtained from the Graduate Division.

New and returning students are required to submit a completed Medical History (UCSBSH FORM 1A) to the Student Health Service. Students returning after less than one year from any University of California campus need not submit a Medical History. For additional medical requirements see Student Health Service section of this catalog.

Study Lists

A student's Official Study List is the list of courses which he files with the Registrar at the beginning of each quarter. The student is responsible for every course listed and can receive no credit for courses not entered on it. Unapproved withdrawal from or neglect of a course entered on the study list will result in a failing grade. Changes (drops or additions) in the Official Study List after it is filed can be made only by petition and no later than the deadlines published in the *Schedule of Classes* calendar.

Study List Limits (Graduate students should refer to the appropriate section of this catalog for information concerning their study list limits.) While the average unit load per quarter for undergraduate students is 15, the *minimum full time program is 12 units*. A student who is not able to carry at least 12 units per quarter must petition to enroll in a *deficit* program at the time of pre-enrollment.

The maximum units allowable per quarter varies among the colleges. These limits are published in the *Schedule of Classes* and in the College Announce-

ments. If a student wishes to enroll in more than the maximum number of allowable units, he must petition for an *excess* program at the time of pre-enrollment.

Enrollment

Concurrent Enrollment (Simultaneous Registration) Students may *not* enroll simultaneously in resident undergraduate courses at UCSB and at another collegiate institution, unless they obtain the prior approval of the dean of their college. Petitions for concurrent enrollment (simultaneous registration) are available from the Registrar. Simultaneous registration in two colleges or schools at UCSB (such as Engineering and Letters and Science) is subject to the approval of the deans of the schools or colleges involved.

Enrollment in Extension Courses A student desiring to complete courses through University Extension is required to gain the *prior* approval of his dean on a petition available from the College Office. Extension courses are not included in the computation of the University of California grade point average.

University of California Extension Courses in the 1-199 series prefixed by X, XB, XD, XL, XR, XSB, XSF, or in extension courses acceptable for transfer to the University of California from other universities may be counted toward graduation. However, University of California Extension courses in the X300 and X400 series will not be accepted for graduation credit unless the dean of the student's college approves. *Since special approval is rarely given, students should not expect to receive degree credit for X300 or X400 courses.*

Enrollment in Foreign Language Courses

A student who wishes to continue study of or who needs to validate a language taken in high school to fulfill a major requirement must take the Foreign Language Placement Examination and is advised to do so immediately upon entrance to UCSB. The score on this examination will determine proper placement into language courses at UCSB. The tests in French, German, Latin, Russian, and Spanish are scheduled at the beginning of each quarter and are announced in the *Schedule of Classes*. Students should consult the appropriate department regarding placement examinations in other languages. The Placement Examination may not be repeated.

Placement Examination The following table shows the theoretical equivalency between the number of years of high school language studied and University courses and normal placement on the examination.

No. Years High School Study in 1 Language:	University Course Equivalency:	Normal Placement on Examination:
1	0	1
2	1	2
3	1,2,3	4
4	1,2,3,4,5	6
5	1,2,3,4,5,6	French 26 or Spanish 25 or German 101A or Italian 101A

Many students find that their performance on the Placement Examination varies somewhat from these theoretical standards. Consequently, while pre-enrollment in language courses may be based upon the *University Course Equivalent* above, final registration should be determined by the results of the Placement Examination, and, if necessary, on the advice of the appropriate foreign language department.

CEEB Achievement Examination Students who have taken the College Entrance Examination Board Achievement Test in Foreign Language whose scores have been submitted to the Admissions Office need not take the Placement Examination and may enroll in foreign language courses as follows:

<i>CEEB Achievement Score</i>	<i>Foreign Language Placement:</i>
0 – 399	Quarter course 1
400 – 450	Quarter course 2
451 – 499	Quarter course 3
500 – 549	Quarter course 4
550 – 599	Quarter course 5
600 – 699	Quarter course 6
700 – 800	French 26 or Spanish 25 or German 101A or Italian 101A

NOTE: Students who have completed two or more years of one language in high school will not receive unit credit for University quarter course 1 in that same language, regardless of their scores on the Placement Examination or on the CEEB Achievement Test in Foreign Language. However, thereafter, they will be eligible for full unit credit for all subsequent courses in that same language. Transfer credit will be allowed for units earned in foreign language courses taken at other colleges or universities even if these courses duplicate high school courses completed previously.

Temporary Absence During a Quarter A student registered in the University for any quarter who has been or will be absent from class *for reasons beyond his control* for a brief period of time should notify the Dean of Students Office. Regardless of the excuse for absence, the student, upon his return, will be held to completion of all course work for each course according to the demands of each instructor. If such an absence is late in the term and is prolonged, thereby making it impossible to complete the course work on time, the student may request his instructor(s) to assign an incomplete grade. If he is unable to make this request personally, he may ask the Dean of Students to act in his behalf and to notify each instructor of the circumstances of the absence. If the instructors agree that an extension of time for completion of the course is justifiable, they will assign I grades. See also the following section on Complete Withdrawal.

Complete Withdrawal A registered student who finds it necessary to withdraw from the University during a quarter without completing the quarter's work should obtain from the Registrar's Office a petition for Complete Withdrawal. If he fulfills the instructions on the appropriate petition and secures the approval of the dean of his college or school, his registration will be canceled

without penalty. Students in the College of Letters and Science are cautioned that the Dean may set conditions for the approval of the petition and that he may deny the petition if the student is attempting to withdraw late in the quarter without good cause.

If a student receives permission to withdraw completely during the early weeks of the quarter, he may be entitled to a full or partial refund of fees for that term in accordance with the fee refund schedule published in the booklet entitled *Student Fees and Deposits* and available at the Cashier's Office. When the withdrawal is caused by personal crises such as acute illness or family emergency, the student may ask the Dean of Students to process the petition if the student has left campus and cannot return to do this personally. If the dean of the student's college approves the withdrawal, the student's registration will be cancelled without penalty.

A student who discontinues his work during a quarter *without* a formal withdrawal (as described above) will receive a grade of F, or NP, as appropriate, for all courses in which he is enrolled for that quarter and he may have his registration privileges curtailed or revoked for future quarters. No refund of fees is available to such a student.

Prior to withdrawing completely from the University, the student is urged to make full use of all of the counseling services available to him and to confer with the appropriate offices on campus if he lives on campus or in married student housing or if he is receiving financial assistance that is contingent upon his registration at the University. He should also note that subsequent to the withdrawal, he may not register in the University until he has applied and received permission for readmission or reinstatement after absence.

Lapse of Status *Lapse of status* is the enforced withdrawal of a student from the University. Failure on the part of any student to meet certain obligations may result in lapse of his status. A student's status may be lapsed: (a) for failure to file his Registration Packet within the prescribed limit of time; (b) for failure to settle financial obligations when due, or to make satisfactory arrangements with the Cashier if payment cannot be made; (c) for failure to complete the Physical Examination; (d) for failure to respond to official University notices.

Leaves of Absence Any undergraduate student may take a leave of absence from his studies for one or more quarters *without petition* at the conclusion of any quarter. (Only those students who withdraw from school *during* a quarter need a petition to do so.) In order to register again in the University, students who have taken a leave of absence must apply for readmission after absence as described below. Readmission is generally approved for students who were on regular academic status when they left the University. Students who were on reinstatement-probation or who were subject to academic disqualification when they left the University will not be readmitted after absence unless they first have been reinstated by the dean of their college.

Readmission after Absence All former students who wish to return to the University after an absence of one or more quarters must file an application for Readmission after Absence. The necessary petition is available from the Registrar and must be submitted by the published deadline for the quarter in which

readmission is desired. If any college-level courses have been completed since the student's last date of attendance at UCSB, transcripts of this work must be submitted to the Registrar.

Students who, when they last attended the University, were on academic probation and were subject to the supervision of the dean of their college or who were subject to disqualification must meet any conditions that the dean may impose before they will be reinstated on a probationary status.

Final Examinations

Final examinations are required in most undergraduate courses. Those courses that do not require final examinations are so indicated in the *Schedule of Classes*. The dates and times of all final examinations each quarter are published in the chart at the beginning of the *Schedule of Classes*. It is the student's responsibility to arrange his program each quarter so that his final examinations do not conflict and do not fall in rapid succession. The times for examinations as published in the *Schedule* are official. *No instructor is authorized to change the time of the final examination.*

So far as practicable, all examinations will be conducted in writing, and a maximum time period for completion of the examination shall be announced prior to the examination. No student shall be permitted to exceed this maximum. The maximum time for a final examination in a non-laboratory course shall not exceed three hours. There can be no individual exemption from a final examination except as provided in the case of Comprehensive Examinations as described below.

Credit by Examination A student registered in a regular quarter who, by reason of advance preparation, believes himself to be adequately grounded in the materials and principles of a course listed in this catalog or in a subject appropriate for inclusion in the University curriculum, may petition to earn *credit by examination*. He must be registered in the quarter during which the examination is taken. *Ordinarily, credit by examination is limited to a total of 12 units.*

Unit and grade point credit for courses taken by examination will be recorded on the student's official transcript and will be computed in the cumulative University of California grade point average provided that the examination was taken on the letter grade basis. Students who wish to take credit by examination on a *Passed-Not Passed* basis may do so only if they are eligible to take courses on that basis during that quarter. Since failure to pass the examination will be recorded as an F or NP, whichever is appropriate, the student is encouraged to make certain that he is fully prepared for the examination before he attempts it.

Credit by examination is not permissible for the purpose of repeating a course. Similarly, certain courses, by reason of special features of the instruction, such as extensive laboratory work or independent research, may not be considered appropriate for credit by examination. In addition, credit by examination is not available for a course in which the student has completed more advanced work in the same field, nor for an elementary course in a foreign language in which the applicant is a native speaker.

Comprehensive Examinations At the end of the quarter in which a student expects to graduate, his major department may examine him in the field of his major, may excuse him from final examinations in courses offered by the department during that quarter, and, with the approval of the Committee on Undergraduate Courses, assign a credit value to such general examination.

Transcript of Record A record of each student's academic work is prepared and retained permanently by the Registrar. A grade report is issued each quarter indicating the courses and units attempted and completed for that term and a summary of cumulative units and grade points. The student is advised to check his copy of the grade report carefully and report any discrepancies to the Registrar immediately. After a period of ten years from initial registration, it is assumed that the student accepts the accuracy of the statement, and the secondary records such as petitions and program changes will be destroyed.

Copies of the official transcript may be obtained for a fee of \$2.00 for the first copy and \$1.00 for each additional copy requested at the same time. Students who have financial obligations to the University will have their requests withheld.

Degree Requirements

To be eligible for a degree from the University of California at Santa Barbara, the student must meet the general University requirements below and the appropriate college and major requirements described in the later sections of this catalog and in the announcements of the colleges. He also must comply with the University regulations governing registration, scholarship, examinations and student conduct. Further information on these subjects is available at the Office of the Registrar, the Office of the Dean of the student's college, and the Office of the Dean of Students, as appropriate.

General University Requirements

American History and Institutions

This requirement is based on the principle that an American student enrolled at an American university should have some knowledge of (1) the history, and (2) the government of his country. The following courses contribute to that objective either by breadth of coverage of American history and institutions, or by depth of concern with significant aspects and periods. The requirement may be satisfied by completion of any two courses chosen from the following list. ("Course" refers to a one-quarter offering, e.g., History 8A.)

Anthropology 131

Art 151D, 161A-B

Asian American Studies 100A-B, 110

Black Studies 1A, 101, 176 (or Political Science 176)

Chicano Studies 1A-B-C, 101A-B-Q (or History 101A-B-Q), 144 (or Sociology 144), 174 (or Political Science 174)

Economics 113A-B

English 130, 135, 136, 137, 138, 139

Environmental Studies 3, 4

History 8A-B-Q, 17A-B, 72, 74, 101A-B-Q (or Chicano Studies 101A-B-Q) 105, 159A-B-Q, 160A-B, 161, 162A-B, 163A-B, 164A-B, 165A-B, 166A-B-Q, 167A-B, 168, 169A-B-Q, 170A-B, 171A-B, 172A-B-Q, S172A-B-Q, 173A-B-C, S173, 174A-B-C-D-Q, 175A-B-C, 176A-B, 177, 178A-B-Q, 179, 179Q

Military Science 1A-B-C, 2A-B-C (Note: 4 units are needed in Military Science courses to equal one acceptable course for this requirement.)

Philosophy 119, 120

Political Science 5, 10, 12, 15, 100, 113, 115, 118, 152, 153, 155, 157, 165, 166, 167, 172, 174 (or Chicano Studies 174), 176 (or Black Studies 176), 180, 185

Religious Studies 151A-B, 152

Sociology 45, 118, 128, 132, 144 (or Chicano Studies 144), 155

(When a course is cross-listed in two different departments, e.g. B.S. 176 and P.S. 176, it will only count as one course toward completion of this requirement.)

Equivalent courses taken at other accredited colleges or universities, in University Extension or in summer session are acceptable. Where appropriate, courses used to satisfy this requirement may also be applied to General Education and/or major requirements. Students may petition to substitute courses in the 190 series (e.g. History 195, Political Science 196) dealing with the history and/or the institutions of the United States of America for the courses listed above. However, verification of the course content must be provided by the professor in charge. (This may be done on the petition itself.) Alternative methods of satisfying the requirement are:

1. Passing a noncredit examination in American history or American institutions. These examinations are offered during the first week of each quarter. For further information see the Department of History or the Department of Political Science.

2. Achieving a score of 3 or higher on the CEEB Advanced Placement Examination in American History.

3. Presenting evidence that the requirement has been satisfied at another collegiate institution whose credits are acceptable for transfer at the University of California, Santa Barbara.

Foreign students on an F-I non-immigrant visa may petition for a waiver of this requirement through the Foreign Student Adviser.

Residence Requirements The University Residence requirement applies to all bachelor's degree candidates. The minimum residence requirement for a bachelor's degree is three terms in the University of California. *At least 35 of the final 45 units must be taken* in the college or school in which the degree is to be taken. A "term" is a regular quarter in which a student enrolls in 6 or more units of resident courses of instruction. Each University of California summer session in which at least 2 units is completed is the equivalent of half a term's residence, but no more than 18 of the final 35 units may be completed in summer session courses on the campus of residence. (Students in the Education Abroad Program, see below.) Students in the College of Letters and Science

also must complete at least 27 upper division units of which at least 18 must be in the upper division major while in residence in the College.

The acceptability of off-campus courses for degree credit is determined by the Office of Admissions although the applicability of acceptable courses to specific requirements is made by the dean of the student's college.

Education Abroad Students With the prior approval of his major department, a student who is enrolled in the Education Abroad Program may satisfy the residence requirement by earning 35 of his final 90 units in residence in the school or college of the University in which the degree is to be taken.

Scholarship Requirement At the time of graduation, at least a 2.0 (C) grade point average is required (1) in all courses undertaken in the University, except those graded Passed-Not Passed, (2) in all courses required in the overall major program (both upper division and lower division), and (3) in all upper division courses required in the major program. It should be noted that courses graded Incomplete, except those on a Passed-Not Passed basis, will be included in grade-point average computations. See also the section below on Scholastic Disqualification.

Subject A: English Composition

Every undergraduate must demonstrate an acceptable level of ability in English composition. This requirement may be met in one of the following ways:

1. Achieving a grade of 5, 4, or 3 on the College Entrance Examination Board (CEEB) Advanced Placement Examination in English.
2. Achieving a score of 550 or higher on the CEEB Achievement Test in English Composition.
3. Entering the University in advanced standing and achieving an acceptable score on the College Level Examination in English Composition.
4. Entering the University (at the freshman or advanced standing level) with credentials showing the completion of an acceptable college-level course in English composition with a grade of C or better. If the course is equivalent to English 1A, transfer credit for that course will be given.

Transfer students who enter UCSB without having taken any of the above tests, 1 and 2, and without a college-level course in English composition completed with a grade C or better, will be required to take the College Level Examination in English Composition at the beginning of the first quarter of attendance at the University. The time and location is published quarterly in the front of the *Schedule of Classes*.

Satisfaction of the Subject A requirement is determined by the Office of Admissions at the time of admission to the University. A student not meeting the requirement in one of the ways described above must enroll in the non-credit course in Subject A during his first quarter of residence. Should any student fail the course in Subject A, he will be required to repeat it each quarter of his residence until he passes. A fee of \$45 is charged for the course, and this charge will be repeated each time the course is taken. The fee must be paid before the Registration Packet is filed.

A continuing student who fails the Subject A course at the University and then completes the equivalent of English 1A with a grade of C or better at another institution either during the summer or while not enrolled in the University will receive transfer credit for English 1A and will have met the Subject A requirement.

Students who maintain an A grade in the Subject A course are permitted, on recommendation of the Committee on Subject A, to withdraw from the course and are excused from the requirement.

Foreign Students All nonimmigrant foreign students, unless exempted, must take the English Language Placement Examination for foreign students. Those who pass this examination will have met the Subject A requirements, as will students who subsequently complete the English as a Second Language requirement. See the admissions section under English for Foreign Applicants.

Unit Requirements

A total of 180 quarter units are required for graduation. These must be distributed according to the minimum requirements set forth by the faculty of the student's college, as explained in the following chapter and in the announcements of the colleges.

A student in the College of Letters and Science who plans to earn degree credit for courses taken at a community college is reminded that *no further unit credit toward graduation may be earned for courses completed at a two year college after a cumulative total of 105 quarter units (or 70 semester units) has been completed in all institutions attended*. To convert semester units to quarter units, multiply the number of semester units by $1\frac{1}{2}$ (e.g. 12 semester units times $1\frac{1}{2}$ = 18 quarter units).

Units and Grading Systems

Units of Credit Credit for academic work undertaken at the University is evaluated in terms of *units*. The value of a course is reckoned at the rate of 1 unit for three hours' work per week per quarter on the part of the student. The credit value assigned to a course is not determined by the number of class meetings per week, but by the number of hours of work required of the student. A student who desires to make up any high school subject deficiency by offering work of college level can, in one University quarter, earn credit equivalent to the credit of one year of work in high school.

Classification of Undergraduate Students

<i>Freshman:</i>	0–40 units completed (including Subject A)
<i>Sophomore:</i>	40.5–83.5 units completed (including Subject A)
<i>Junior:</i>	84.0–134.5 units completed (excluding Subject A)
<i>Senior:</i>	135.0 or more units completed (excluding Subject A)

Grading System

Grades The work of all students is reported in terms of the following grades:

Undergraduate Courses:	Graduate Courses:
A (excellent)	A (excellent)
B (good)	B (good)

Undergraduate Courses:

C (adequate)
 D (barely passing)
 F (not passing)
 P (passed)
 NP (not passed)
 I (incomplete)
 IP (in progress)

Graduate Courses:

C (adequate)
 D (poor)
 F (not passing)
 S (satisfactory)
 U (unsatisfactory)
 I (incomplete)
 IP (in progress)

The grades A, B, C, D, may be modified by plus (+) or minus (−) suffixes. Grade-points per units shall be assigned by the Registrar as follows: A = 4; B = 3; C = 2; D = 1; F, I, IP, P, NP, S, U = none, Units, but not grade points, are assigned for a P or an S grade. Minus grades carry three-tenths grade point less per unit and plus grades (including A+) three-tenths grade point more per unit than unsuffixed grades.

Grade Changes All grades except I and IP are final when filed by an instructor in his end-of-term course report. However, an instructor may report a correction of a recorded course grade at any time if a clerical or procedural error has been made; furthermore, an instructor may report to the Registrar an altered course grade based on suitable and appropriate re-evaluation of a student's performance within the next term following that in which the original grade was received, subject to the following restrictions:

The basis for change is found in the work previously accomplished in the course in question by the student as a part of his regular participation in class activities. The change in the student's grade will not create inequities to others whose grades are fixed. No term grade, except I, may be revised by re-examination. No change from letter grade to *Passed/Not Passed* basis or the converse will be allowed.

Repetition of Undergraduate Courses Repetition of undergraduate courses not authorized by the appropriate Committee on Courses to be taken more than once for credit is subject to the following conditions:

A student may repeat only those courses in which he received a grade of D+, D, D−, F, NP. Such courses may be repeated on a *Passed/Not Passed* basis if the course is so offered. In no case, however, shall an NP grade replace an earlier letter grade in the computation of the grade-point average. Courses in which an NP has been received may be repeated on a letter grade basis, if the course is so offered.

Repetition of course more than once requires approval by the appropriate dean in all instances. Degree credit for a course will be given only once, but the grade assigned at each enrollment shall be permanently recorded. In computing the grade-point average of an undergraduate who repeats courses in which he received a D+, D, D− or F, only the most recently earned grades and grade points shall be used for the first 16 units repeated. Units earned in only one of these attempts may be counted toward satisfaction of graduation requirements. In the case of additional repetitions, the grade-point average shall be based on all grades assigned and total units attempted, except for this first 16 units.

It is the student's responsibility to indicate the repetition on the study list for the quarter in which a course is repeated.

Incomplete Grades The grade *Incomplete* (I) may be assigned when a student's work is of passing quality, but is incomplete. The student is entitled to have the grade of *Incomplete* replaced by a passing grade, as determined by the instructor concerned, and to receive unit credit and appropriate grade points upon satisfactory completion of the work of the course by the end of the next full quarter of the student's registration in regular session. The dean of the appropriate college or school has authority to extend the deadline for completion in the event of unusual circumstances that would clearly impose an unfair hardship on the student if the original deadline were maintained. If the work is not completed according to the deadline or authorized extension of it, the *Incomplete* shall automatically be changed to an F or NP as appropriate. *The student may not repeat a course in which an incomplete was assigned and therefore may not registrar for the course a second time in order to remove a grade of I.*

In the calculation of an undergraduate student's grade-point average, the grade *Incomplete* (I) is disregarded, except for calculating grade points in awarding bachelor degrees.

Incomplete grades will *not* be included in the computation of the student's grade-point average at the end of the quarter. However, at the time of the Junior Evaluation and at the time of graduation, the Registrar will include any I grades (except those on a Passed-Not Passed basis) in the computation of the grade-point average in order to determine if the student has met the minimum scholarship requirements. An incomplete grade, in these computations, has the same effect as a grade of F.

In-Progress Grades The grade IP (in progress) may be assigned provisionally in each but the last term of a course extending over more than one term. In the last term, the letter grades assigned by the instructor replace such provisional grades. In the event the full sequence is not completed, the grade IP will be replaced by the grade I and further changes in the student's record will be subject to the conditions governing incomplete grades. IP designations are to be ignored in computation of grade-point averages.

Satisfactory-Unsatisfactory Grades With the approval of the departments concerned, individual study and research, or other individual graduate work undertaken by a graduate student may be evaluated by means of the grades *Satisfactory* or *Unsatisfactory*.

The grade S shall denote work of quality that would otherwise be awarded the grade B [not B -] or better. No credit will be allowed for work graded U.

Departments may offer graduate course on an *S/U* only basis with the approval of the Graduate Council.

With the approval of the Graduate Council, departments may designate certain graduate courses in addition to those noted in (A) above as available to the student on a letter grade or an *S/U* basis, or in the case of undergraduate students admitted to the course, *Passed/Not Passed*.

With the approval of the Graduate Council, departments may designate certain graduate courses as available on an *S/U* basis to students not majoring in

or otherwise concentrating on the subject matter in question, providing the students have the approval and signature of their Graduate Advisers.

Passed-Not Passed Grades A student in good standing (that is, not on academic probation) may undertake courses on a *Passed/Not Passed* basis subject to the following limitations. The grade P will be awarded only for work which would otherwise receive a grade of C [not C—] or better.

At the time the degree is awarded, students enrolled in a bachelor's program may receive graduation credit for courses graded "P" which were undertaken and passed on the UCSB campus, subject only to: the limitation that at least 120 units taken in residence must be taken on a letter grade basis as part of the requirement for graduation, or the limitation that a minimum of two-thirds of the units taken in residence at UCSB must be taken on a letter grade basis as part of the requirement for graduation.

Courses offered on a *Passed/Not Passed* basis must be so listed in the *Schedule of Classes* and must be available to all qualified students on this basis.

A department may, after securing approval of the Committee on Undergraduate Courses and the Executive Committee of the appropriate college or school, designate which "major" courses may be taken on a P/NP basis, with a maximum of 8 such units being allowed per student.

Units carried on a *Passed/Not Passed* basis count toward the degree requirements but the course is disregarded in computing the student's grade-point average.

Undergraduate courses may be offered on a *Passed/Not Passed* only basis with the approval of the Committee on Undergraduate Courses and the Executive Committee of the appropriate college or school.

Election of the *Passed/Not Passed* option must be indicated on the official study list. On approval by petition prior to the end of the seventh week of instruction, a student may change a *Passed/Not Passed* enrollment to an enrollment under the letter grade system (A–F), and vice versa, if the student is on regular academic status. Class enrollment lists distributed by the Registrar prior to the assignment of term grades shall indicate *Passed/Not Passed* enrollments.

If a student earns more than 8 units of NP grades in any one term or more than 20 units of NP grades in all terms of University enrollment combined, the Faculty or its designated agents may prohibit or restrict for any specified period of time his further exercise of the P/NP option. In the case of repeated courses in which an NP grade was earned for the first attempt, the original NP grade will be ignored in the determination of the 20 units total.

Any University Extension course under the jurisdiction of the Santa Barbara Division may be taken on a *Passed/Not Passed* basis with the approval of the instructor and the department concerned, and subject to such further conditions as the Divisional Committee on University Extension may impose.

College of Creative Studies Grading The work of each student in the College of Creative Studies shall be evaluated as follows:

Courses taken in the College are to be reported in terms of grades *Passed* or *Not Passed*. The grade *Passed* shall be strictly reserved for work of satisfactory

quality. For each course in which he earns a grade of *Passed* the student shall receive from one to six units of credit, as determined by the instructor of the course. No credit shall be awarded for a grade of *Not Passed*.

Courses taken outside the College of Creative Studies shall be reported as provided elsewhere in these grading regulations.

Honors at Graduation

Students who have completed their fields of concentration with distinction and who have general records satisfactory to the Committee on Undergraduate Scholarships, Honors, and Prizes are recommended for graduation with honors, high honors or highest honors.

Honors at Graduation will be based on a minimum grade-point average at the University of California of 3.25 for Honors, 3.50 for High Honors and 3.75 for Highest Honors. A minimum of 90 units (including Summer Session units but excluding University of California Extension units) earned at the University of California will be required for consideration for Honors at Graduation.

Academic Eligibility

Academic Probation An undergraduate student in the College of Engineering or in the College of Letters and Science is normally subject to academic probation if at the end of any term his cumulative grade-point average is less than a 2.0 (C average) computed on the total of all courses undertaken in the University except those graded I, IP, P, or NP. The normal basis for removal of academic probation will be a 2.0 grade point average based on all work taken in the University (except those courses graded I, IP, P or NP).

Academic Disqualification An undergraduate student in the College of Engineering or the College of Letters and Science is subject to disqualification from further registration in the University (a) if, at the end of any term, his grade-point average for that term is less than a 1.5, or (b) if while on academic probation his grade-point average for any term falls below 2.0, or (c) if after two consecutive terms on academic probation he has not achieved a grade-point average of 2.0 computed on the total of all courses undertaken in the University. The grades I, IP, P, and NP are disregarded at the end of each quarter in the computation of the cumulative and term grade-point average.

An undergraduate student on academic probation or subject thereto is under such supervision as the Faculty of his college or school may determine. Continued registration of an undergraduate student who is subject to academic disqualification is at the discretion of the Faculty concerned, or its authorized agent, and is subject to such conditions as that Faculty may impose.

Reinstatement A student who is subject to academic disqualification may appeal to the dean of his college for reinstatement on probationary status. The dean will review the student's appeal, will determine if the student may be reinstated, and will set conditions for his reinstatement. A student who is reinstated on probation is responsible for fulfilling the conditions of reinstatement and is subject to the supervision of the dean until officially returned to regular academic status.

Probationary Status (Creative Studies) To be eligible for continued registration in the College of Creative Studies, a student must maintain a grade point average of at least 2.0 in all University courses undertaken outside the College. Students with scholastic deficiencies in such courses are subject to Faculty supervision specified above for undergraduates in other colleges. With the approval of the President of the University and the College Executive Committee, the Provost may require a student to withdraw from the College on the recommendation of the student's adviser.

Transfer In order to transfer from one campus of the University to another, or from one college or school or another on the same campus, a student who has been scholastically disqualified or who is on probation must obtain the approval of the appropriate faculty, or its designated agent, to whose jurisdiction transfer is sought. Upon completion of the transfer, the student is subject to the supervision described above.

Student Conduct and Responsibility

Student Conduct and Discipline A student enrolling in the University assumes an obligation to conduct himself in a manner compatible with the University's function as an educational institution. Rules concerning student conduct, student organizations, use of University facilities and related matters are set forth in both University policies and campus regulations, copies of which are available upon request at the Office of the Dean of Students. Particular attention is called to the booklet *University of California Policies to Students and Student Organizations, Use of University Facilities, and Non-Discrimination* and to the Standard of Conduct set forth therein.

The Judicial Council of the Associated Students is concerned with means of promoting conduct appropriate to self-governing, responsible students and is empowered to recommend procedures and policies conducive to attaining this end. It welcomes participation by students. Living groups may have their own judicial councils which enact certain penalties against members for infraction of residence regulations. Members of the faculty, the Faculty Committee on Student Conduct, and the Dean of Students are responsible to the Chancellor and to the President of the University for administering penalties in instances when students disregard University regulations or civil laws.

Degrees of Discipline There are eight degrees of discipline: warning, censure, disciplinary probation, restitution, interim suspension, suspension, dismissal, and expulsion. Suspension is exclusion from the University for a definite period. Dismissal is exclusion for an indefinite period, with the presumption that the student's connection with the University will be terminated. Expulsion is the most severe academic penalty, and is final exclusion of the student from the University. The University considers the effect of these measures upon the personal welfare and education of the individual students involved, as well as upon the welfare of the student body as a whole.

Student Responsibility Each student is responsible for compliance with the regulations printed in this catalog and in the *Schedule of Classes*, with all official

notices published in the campus newspaper, with notices on official bulletin boards, and with all regulations of the University.

Notice of change of name and/or address must be reported to the Registrar's Office immediately after change.

A student may not receive grades, transcripts of records, teaching credentials, or diplomas until all of his University obligations have been met. He may not register at the beginning of any quarter until past obligations have been cleared or officially extended by the Chancellor or the Dean of Students. Failure to comply with University obligations may result in the lapse of his status.

Failure to keep appointments with administrators or University faculty members, whether made through notices in mail boxes, in the student newspaper, or on bulletin boards, will be regarded as a breach of student responsibility, and will subject the student to disciplinary action.

It is the student's responsibility to secure the consent of the instructor before enrolling in a course with prerequisites which the student has not completed.

In the course of the student's academic career, he or she may be taking courses which may involve a low level of psychological, sociological, or physical risk as part of the normal routine of classroom instruction. However, it is understood that the student will be apprised through the instructor of any possible risks. Nevertheless, he or she must satisfy the requirements stated throughout this catalog in order to obtain a degree.

Student Work All material of whatever nature submitted by a student in satisfaction of all or any portion of a course requirement is the property of the University and is not subject to any claim on the part of the student who has submitted it.

Further, it is a condition of attendance for any student in any course that any material which he shall produce independently, and not as a part of any course requirement, must be removed by him from University premises not later than the last day of the quarter in which he produced such material; and that if he shall fail to remove it as herein provided, there shall be no obligation on the part of the University to hold or safeguard it and all risks of its destruction, loss, or other disposition shall rest solely upon the student.

Authority of Instructors No student may enter upon any organized instructional activity until he has registered and his enrollment has been approved by the appropriate study list authority. No student will be permitted to enter upon or continue the study of any subject if, in the opinion of the instructor, he lacks the necessary preparation to ensure competent work in the subject.

College of Letters and Science

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College of Letters and Science

Aims The College of Letters and Science is committed to a concept of the educated person defined as one who is able to fulfill his potentialities and deal effectively with his environment.

In keeping with this concept, the College has developed a program of general education designed to introduce each student to a broad spectrum of human endeavor and accomplishment. Through completion of the College's requirements, the student will have an opportunity to gain an enhanced understanding of the English language, an introduction to philosophy, literature and the fine arts, a comprehension of the basic principles of history and the social sciences, and an acquaintance with the biological and physical sciences.

Degrees and Majors Offered

The College of Letters and Science is composed of 34 academic departments and has an enrollment of approximately 10,000 students. It offers a Bachelor of Arts, a Bachelor of Science, and a Bachelor of Music degree and has majors in 58 different academic fields, as follows:

Departmental Majors

Anthropology	Ergonomics and Physical Education
Cultural Emphasis	Health Studies
Physical Emphasis	Human Factors
Aquatic Biology	Physical Education
Art	Experimental Psychology
History Emphasis	French
Studio Emphasis	Geography
Biochemistry-Molecular Biology	Geology
Biological Sciences	Germanic Languages and Literature
Black Studies	Greek
Botany	History
Marine Emphasis	Italian
Terrestrial Emphasis	Latin
Cellular and Organismal Biology	Linguistics
Chemistry—Bachelor of Arts	Mathematics
Chemistry—Bachelor of Science	Music
Chinese	Theory-History Emphasis
Classics	Theory-Composition Emphasis
Communication Studies	Performance Emphasis
Dance	Special Performance Emphasis
Developmental Psychology	Music—Bachelor of
Dramatic Art	Philosophy
Acting Emphasis	Physics—Bachelor of Arts
Design and Technical Theater	Physics—Bachelor of Science
Directing Emphasis	Physiological Psychology
Literature and Criticism Emphasis	Political Science
General Emphasis	Portuguese
Economics—General	Psychology (General)
Economics—Business	Religious Studies
English	Slavic Languages and Literature
Environmental Biology	Sociology

Spanish
Speech and Hearing

Zoology

Interdepartmental Majors

African Area Studies
Asian Studies
Classical Civilization
Combination Social Science
Comparative Literature
Computer Science
Environmental Studies
Film Studies

Hispanic Civilization
Individual
Law and Society
Medieval Studies
Middle Eastern Studies
Russian Area Studies
(Must be completed in conjunction with
a second major in an approved area.)
Tutorial

During his freshman and sophomore years, a student may register as an undeclared major. However, by the beginning of his junior year, each student in the College selects and completes the requirements for one or more of the above majors, or if he is qualified to do so, he may design an individual major, with the approval of the Dean and the Executive Committee.

Details concerning the individual major option are given in the *Letters and Science Announcement* and in a special information sheet available in the College Office.

Letters and Science Scholars Program The Scholars Program of the College of Letters and Science provides opportunities for a more individualized education for students of very high potential and strong motivation through close association with the faculty, counsellors and fellow students. Scholars are invited to participate in the Program on the basis of criteria established by a Scholars Council of eight faculty members and the Associate Dean in charge of the Program. These criteria include aptitude and personality tests, interviews with counselors, and recommendations from faculty members. The program offers the Scholars a small college atmosphere within the larger structure of the University, counseling services, special library privileges, encouragement to undertake special projects in their fields of interest, and access to a Scholars Lounge for social gatherings and intellectual pursuits.

Preprofessional Curricula

While enrolled in the College of Letters and Science, students may prepare for admission to various professional programs offered at other colleges and universities. Certain college advisers and faculty members serve as preprofessional advisers in the following fields:

Business Administration
Dentistry
Education
Law
Medical Technology
Medicine

Nursing
Physical Therapy
Special Education
Speech Therapy
Veterinary Medicine

Information concerning recommended or required courses for these fields can be found in the *Letters and Science Announcement* and in special handout sheets and professional school catalogs available in the College Office. Students who would like a personal interview with the preprofessional adviser in their chosen field should come to the College Office to determine the adviser's name and location.

Summary of Degree Requirements

To be eligible for graduation with a Bachelor of Arts, a Bachelor of Science or a Bachelor of Music Degree, the student must meet all general University requirements, all requirements for the College of Letters and Science and all the major requirements, as summarized below.

General University Requirements

(See preceding chapter.)

American History and Institutions

Residence

Scholarship

Subject A

General Education Requirements

(See below.)

Bachelor of Arts Program—

(Mandatory with all majors except music, chemistry, and physics)

Bachelor of Music Program—

(Available only in music)

Major Requirements

Bachelor of Science Program—

(Available only in Chemistry or Physics)

(Requirements for all majors are described in the departmental entries later in this catalog.)

Unit Requirements

*Bachelor of Arts and
Bachelor of Music degree*

{ Must include
162 units from
courses on the
Letters & Science
List of Courses.

{ Must include
60 upper division
units from courses
on the Letters &
Science List of
Courses

* 180 overall
units

{ 18 Free electives
(May include as
many as 18 units
not on Letters &
Science List of
Courses.)

{ May include no
more than 6.0
total units of $\frac{1}{2}$
unit Physical
Activities courses.

Bachelor of Science degree

* 180 overall units

{ May include no
more than 6.0
total units of $\frac{1}{2}$
unit Physical
Activities courses.

* After 105 cumulative quarter units have been completed in the University and elsewhere, no additional unit credit can be permitted for any courses taken subsequently at a community (i.e., a two year) college. Thereafter, only subject credit will be allowed for each required course taken at a community college.

Letters and Science Announcement

The *Letters and Science Announcement* is published yearly in May and is a compendium of information important for students in this College. It includes a full description of the degree requirements, a large section describing all of the special options available to students, and a good deal of general academic information and advice. New students will receive a copy of the *Announcement* which will include a special supplement designed for them when they are admitted to UCSB. Continuing students will receive an *Announcement* in late May.

Requests for a copy of this publication should be addressed to the Office of the Dean, College of Letters and Science, University of California, Santa Barbara, California 93106.

General Education Requirements

Each student admitted to the College of Letters and Science during the 1973-74 academic year is responsible for completion of the General Education requirements appropriate for his degree as described in this catalog, unless he is eligible for one of the alternatives mentioned in the following paragraphs. The General Education requirements may be satisfied by courses completed on this campus or by equivalent courses completed at another accredited collegiate institution or by means of CEEB Advanced Placement credit.

Transfer Students Prospective transfer students may use the appropriate list of required courses and their descriptions in this catalog as a guide for selection of equivalent courses at other schools. Students who are attending a California community college should consult their counselors to determine which courses are acceptable for completion of the appropriate General Education requirements at UCSB. New transfer students may petition to follow the General Education program which was in effect here at the time they were first-term freshmen or that was in effect three years previous to their first enrollment here, *whichever is more recent*.

New *inter-campus* transfer students who have completed at least 40.5 units in the College of Letters and Science at another campus of the University may petition to continue following the General Education requirements of their previous campus in lieu of the General Education requirements of this College. However, students are cautioned that *such petitions will be approved only if the previous requirements are similar to those here*. If significant differences exist, the student will need to compensate for any subject deficiencies by taking courses in these areas after his transfer to UCSB.

Students who have completed transferable courses elsewhere which do not correspond exactly with courses at UCSB are encouraged to consult an academic adviser in the College Office regarding possible substitutions in the General Education requirements.

Individual Curriculum After a quarter's residence at UCSB, but before completion of 84 units, a student of exceptional ability and performance who wishes to achieve the same objectives by courses better suited to his needs and attainments is invited to propose his own general education curriculum in consultation

GENERAL EDUCATION CREDIT FOR ADVANCED PLACEMENT EXAMINATIONS

ADVANCED PLACEMENT EXAMINATION COMPLETED	BACHELOR OF ARTS DEGREE	BACHELOR OF SCIENCE DEGREE	BACHELOR OF MUSIC DEGREE	NO FURTHER CREDIT WILL BE ALLOWED FOR FOLLOWING COURSES COMPLETED THEREAFTER
BIOLOGY score of 3, 4, or 5	satisfies req'ts 5a <i>and</i> either 1 course in 5c or 1 course in 6 (does not satisfy lab req't)	see major dept. re: application of credit toward requirements	satisfies req'ts 5a <i>and</i> either 1 course in 5b or 1 course in 6	Biology 20 or 20Z or Botany 20 or NS 1C
CHEMISTRY score of 3, 4, or 5	satisfies req'ts 5b <i>and</i> either 1 course in 5c or 1 course in 6	see major dept. re: application of credit toward requirements	satisfies req'ts 5b <i>and</i> 1 course in 6	Chemistry 20 or 25 or NS 1B
ENGLISH score of 3 score of 4 or 5	satisfies English 1A satisfies English 1A and 1B satisfies 2 courses in 6*	satisfies English 1A satisfies English 1A and 1B satisfies Gen. Ed. foreign language req't*	satisfies English 1A satisfies English 1A and 1B satisfies Gen. Ed. foreign language req't*	English 1A English 1A or 1B courses 1-5 in same language
FOREIGN LANGUAGE score of 3, 4, or 5	satisfies req'ts 4a <i>and</i> either 4c or 1 course in 6	satisfies 10 units in requirement 4	satisfies req'ts 4a <i>and</i> either 1 course in 4c or 1 course in 6	
HISTORY—AMERICAN score of 3, 4, or 5	satisfies req'ts 4a <i>and</i> either 4c or 1 course in 6	satisfies 10 units in requirement 4	satisfies req'ts 4a <i>and</i> either 1 course in 4c or 1 course in 6	
HISTORY—EUROPEAN score of 3, 4, or 5	satisfies req'ts 4a <i>and</i> either 4c or 1 course in 6	satisfies 10 units in requirement 4	satisfies req'ts 4a <i>and</i> either 4c or 1 course in 6	
PHYSICS score of 3, 4, or 5	satisfies req'ts 5b <i>and</i> either 5c or 1 course in 6	see major dept. re: application of credit toward requirements	satisfies req'ts 5b <i>and</i> 1 course in 6	Physics 10 or NS 1A
MATHEMATICS (AB or BC) score of 3, 4, or 5	satisfies req't 5c and 1 course in 6	see major dept. re: application of credit toward requirements	satisfies req'ts 5b <i>and</i> 1 course in 6	Mathematics 1 or 2 or 3A or 34A

* Consult major requirements to determine if a specific language is required.

with his faculty adviser. If the adviser agrees to sponsor this program, he will submit it to the Dean of the College for approval.

Advanced Placement Examinations Students who completed special Advanced Placement courses in high school and who subsequently earned scores of 3, 4, or 5 on the CEEB Advanced Placement Examination taken prior to high school graduation will receive 10 units of credit toward graduation from UCSB for each examination completed provided that the scores are submitted to the Admissions Office. See the preceding table and the *Letters and Science Announcement* for information explaining how such credit may be applied to the General Education requirements.

General Education Requirements

Courses required in the major, either lower or upper division, may also be used to satisfy any appropriate General Education requirements below. See item 6 in B.A. program for an exception. Similarly, courses used for the American History and Institutions requirement may apply to the General Education requirements simultaneously. Courses used to satisfy the General Education requirements may be taken on a Passed-Not Passed basis, if so offered, provided that they are not also required in the major. (See P/NP section for an exception.)

Bachelor of Arts Degree

Effective Fall 1973, the General Education Program for the B.A. degree has been revised to provide greater program flexibility. Detailed information will be available in late summer.

Minimum Units Required

1. ENGLISH 1A-1B—READING AND COMPOSITION 8 Units

English 1A and 1B must be completed in successive quarters immediately upon entrance to the University if the Subject A requirement has been completed. If the Subject A requirement is not satisfied at the time of admission, immediate enrollment in a Subject A course is mandatory. Upon successful completion of this course, English 1A and 1B are required during the following two quarters. No other English courses may be taken until the entire English 1A-1B requirement is satisfied.

2. FOREIGN LANGUAGE 0 Units

There is no longer a foreign language requirement for the Bachelor of Arts degree. However, certain majors specify study in languages appropriate to the major field. Therefore, students should consult the departmental entries in this catalog to determine whether or not foreign language courses are required in their chosen majors. Students who enroll in foreign language courses either as electives or as major requirements are advised to consult the section on Foreign Language Enrollment earlier in this catalog.

3. HUMANITIES (Completion of A, B & C required) 15-21 Units

A. Literature 4 Units

One or two lower or upper division literature courses are required for a total of at least 4 units. These may be specific to an individual author or a particu-

lar genre or time period. The language of instruction may be English or a foreign language, and the courses may be selected from the following departments:

Black Studies 38, 128, 129, 130A,B, 132, 133, 134, Chicano Studies 190, Classics, Comparative Literature, Eastern Languages, English, French and Italian, Germanic and Slavic Languages and Literatures, or Spanish and Portuguese.

Culture courses as well as those in linguistics, creative writing, and grammar and composition, even those with an R suffix, will not apply to this requirement.

B. Philosophy 4–12 Units

Students may satisfy this requirement with Philosophy 1 or Philosophy 5 or Philosophy 20ABC. If Philosophy 20ABC is chosen, the *entire series* must be completed to receive credit for this requirement. Philosophy 5 is open to only lower division students. Unit credit toward graduation is allowed only for Philosophy 1 or 5, but not both.

C. Fine Arts: History and Appreciation 7–8 Units

Students must choose *two courses* from the following list. These courses may be selected from two separate areas or from a single area if enough courses are offered, except that unit credit *cannot* be allowed for both Art 1 and 150. Art 1 or 150, 74; Black Studies 114A, 140; Chicano Studies 188A,B; Dance 45, 145A,B; Dramatic Art 46, 60, 146, 148, 160A, 160B, 160C, 160D, 160E, 160F; French 178X, 184X, 187, 187X, 187Y, 188X, 189X; Italian 142X, 180X,Y,Z, 188X, 188Y, 189X; Music 15, 16, 113, 114A, 114B, 115A, 115B, 116A,B, 117, 118A, 118B, 119A, 119B.

4. HISTORY, SOCIAL SCIENCES, AND PSYCHOLOGY

(Completion of A and B and C required) 13–16 Units

A. History 3–4 Units

This requirement may be satisfied by any 3–4 unit History course.

B. Social Science, Psychology Electives 7–8 Units

Two courses in *separate* areas selected from those listed below are required:

Anthropology 2 or 101; Economics—any course except accounting or statistics; Environmental Studies 3, 4, 125, 135, 165A, 165B, T173; Linguistics—any course; Political Science—any course; Psychology 1 or 101; Sociology 1 or 101.

C. Social Science Elective 3–4 Units

One additional social science course from the following list is required:

Anthropology—any course *except* 5, 105, 150, 151, 152A, 152B;

Asian American Studies 100A, 100B, 110;

Black Studies 1A, 1B, 1C, 101, 102, 104, 105, 110, 119, 120, 150, 160A, 160B, 160C, 176;

Chicano Studies 1A, 1B, 1C, 101A,B,Q, 105, 115, 144, 170, 174;

Economics—any course *except* accounting or statistics;

Environmental Studies, 3, 4, 125, 135, 165A, 165B, T173;

Geography—any course *except* 3, 110, 111, 113, 115A,B, 131A, 131B;

German 32;
 History—any course;
 Linguistics—any course;
 Political Science—any course;
 Portuguese 125A, 125B;
 Psychology—any course *except* 113A,B,L;
 Russian 32;
 Sociology—any course;
 Spanish 180,
 Swahili 32.

5. NATURAL SCIENCE AND MATHEMATICS 11–13 Units

This requirement may be satisfied by completion of *one of the following two options*:

Option I: Completion of Natural Science 1A–1B–1C 12 Units

This is a three quarter survey course presenting the concepts of the Natural Sciences for non-science majors. Course 1A is prerequisite to course 1B, which is prerequisite to course 1C. *General Education credit will be granted only if all three courses are completed.* The laboratory requirement will be met by Natural Science 1B.

Option II: Completion of A and B and C 11–13 Units including one laboratory course:

- A. Biology 20 or 20Z or 21, or Botany 20, or
 Environmental Studies 2 4–5 Units
- B. Chemistry, Geology, or Physics—any course of 3 or
 more units—or Environmental Studies 1 or
 Astronomy 1 3–5 Units
- C. One additional science elective, chosen from: . . . 3–4 Units
 Anthropology 5, 105, 150, 151, 152A, 152B;
 Astronomy 1, 2; Biology—any course *except* 2ABC,
 20, 20Z or 100; Botany—any course *except* 20;
 Chemistry—any course; Environmental Studies 1,
 2, 5, 6, 106, 123, 155; Geography 3, 110, 111, 113,
 115A, 115B, 131A,B, 165; Geology—any course;
 Mathematics—any course (*except* 1, 2, or 100ABC);
 Physics—any course (*except* Y or 100); Psychology
 113A, 113B, 113L; Zoology—any course.

Due to similarity in course content, unit credit toward graduation will be granted for only one course from the following:
 Biology 20 or 20Z or Botany 20 or Natural Science 1C.

6. GENERAL EDUCATION ELECTIVES 12–17 Units

Students must complete 4 additional General Education elective courses selected only from the courses approved for General Education in 1–5 above and/or any of the following: Religious Studies (any course), Speech 11 or 180, or foreign language, any course. *These courses cannot be in the department of the student's major.*

3 units (6 courses) of $\frac{1}{2}$ unit Physical Activities courses may count as one of the four elective courses required. (WARNING: *No more than 6.0 total units of $\frac{1}{2}$ unit Physical Activities courses will count toward the 180 unit requirement for graduation.*)

Bachelor of Science Degree (available only to Chemistry and Physics majors)
The student must complete all requirements listed below.

Minimum Units

1. English: Reading and Composition 8 Units
English 1A–1B must be completed as soon as the Subject A requirement is satisfied.

2. Foreign Language 12 Units
One year (three quarters) of one language is required. *See major requirements for specific languages required for Chemistry and Physics majors in the Bachelor of Science Program.*

3 & 4. Humanities and Social Sciences 31 Units
(A total of 31 units from categories #3 and 4 below is required, distributed approximately evenly between the two categories, with no fewer than 11 units in each area.)

3. Humanities:

Art 1 or 150, 7A	Italian 142X, 180X,Y,Z, 188X, 188Y,
Black Studies 38	189X
Black Studies 38, 114A, 128, 129,	Literature: English or Foreign
130A,B, 132, 133, 134, 140	Music 15, 16, 113, 114A, 114B, 115A,
Chicano Studies 188A, B, 190	115B, 116A,B, 117, 118A, 118B,
Dance 45, 145A, 145B	119A, 119B
Dramatic Art 46, 60, 146, 148,	Philosophy 1 or 5 or 20ABC series
160ABCDEF	Religious Studies—any course
French 178X, 184X, 187, 187X,	Speech 11, 180
187Y, 188X, 189X	

4. History, Social Sciences, Psychology

Anthropology—any course <i>except</i> 5,	Geography—any course <i>except</i>
105, 150, 151, 152A, 152B	3, 110, 111, 113, 115A,B, 131A,B,
Asian American Studies 100A,	165
100B, 110	German 32
Black Studies 1A, 1B, 1C, 101, 102,	History—any course
104, 105, 110, 119, 120, 150,	Linguistics—any course
160A, 160B, 160C, 176	Political Science—any course
Chicano Studies 1A, 1B, 1C,	Portuguese 125A,B
101A,B,Q, 105, 115, 144, 170, 174	Psychology—any course <i>except</i>
Economics—any course <i>except</i>	113A,B,L
accounting and statistics	Russian 32
Environmental Studies 3, 4, 125,	Sociology—any course
135, 165A,B, T173	Spanish 180
	Swahili 32

5. Natural Science and Mathematics

This requirement will be satisfied automatically by the courses required in

preparation for the Chemistry or Physics major (B.S. program). See major department entry for the specific requirements.

Bachelor of Music Degree The Bachelor of Music degree is open by audition only to certain specially qualified students in Music. Information concerning admission to this program may be obtained by writing to or visiting the Department of Music. The General Education program for this degree is *identical* with that of the Bachelor of Arts degree except that, unlike the B.A. Program, only 3 humanities, 3 social sciences, and 2 sciences are required for the Bachelor of Music degree. Further, completion of the fifth quarter or the equivalent of a foreign language is required although a request for deletion of this requirement is being considered. French, German, or Italian is recommended. Details concerning the requirements for this degree are available at the Department of Music.

Letters and Science List of Courses

Students in the Bachelor of Arts and Bachelor of Music degree programs must complete a minimum of 162 of the total 180 units required for graduation in courses chosen from the Letters and Science List of Courses. Of these required 162 Letters and Science units, at least 60 must be upper division units chosen from the Letters and Science List of Courses. (See the *Letters and Science Announcement* for a complete statement of this requirement.)

All courses in the *Catalog* are on the L&S List of Courses *except* those in the College of Creative Studies, the College of Engineering (except those specially approved below) and the Graduate School of Education. In the College of Letters and Science, the following courses are *not* included on the L&S List: English 106G, Health 40, 100, 105, 106, 107, Military Science (all courses), and Physical Activities (all courses).

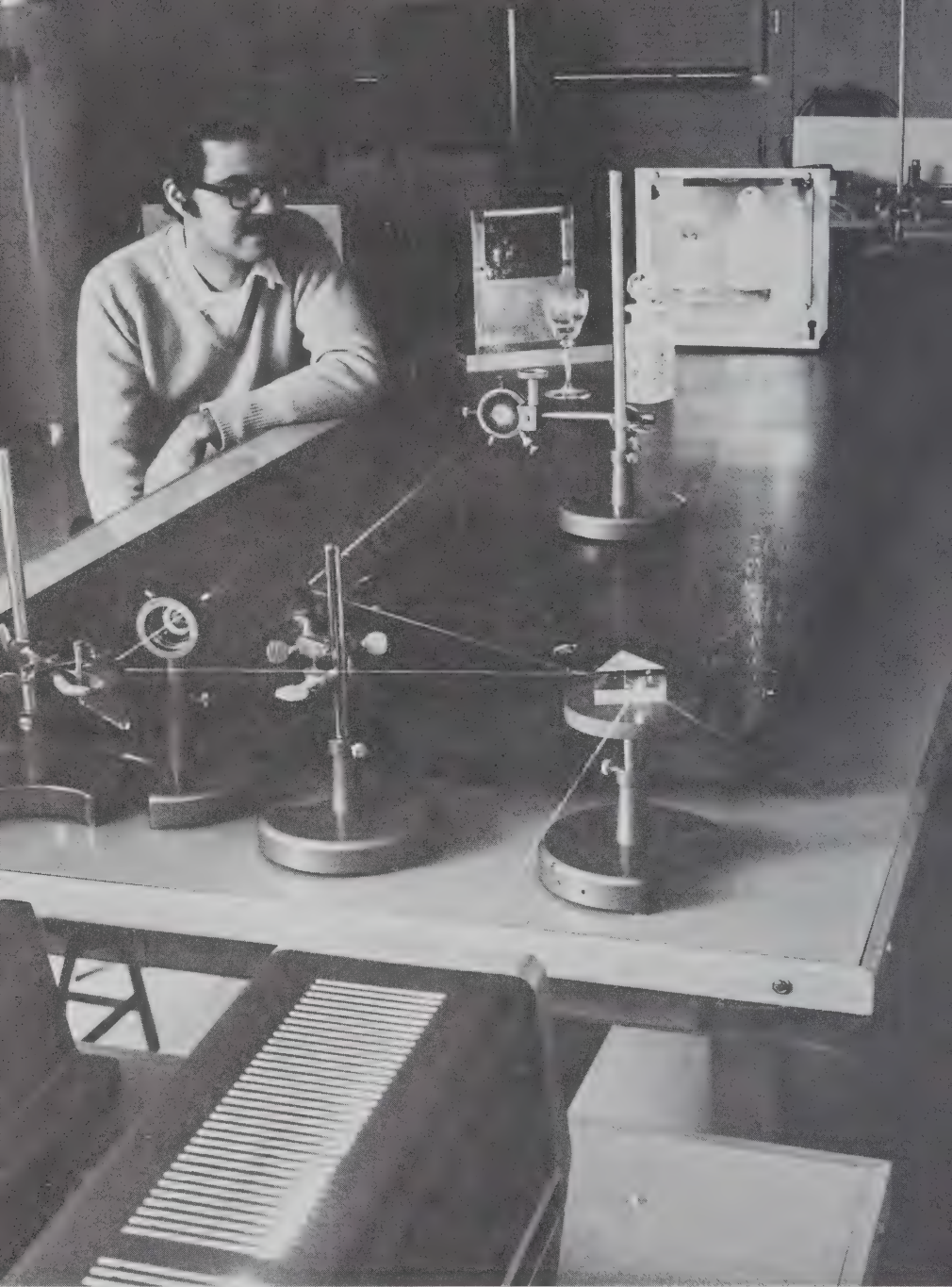
The following Engineering courses have been approved for Letters and Science credit:

EE 1, 5, 105, 130A,B,C, 150, 151, 152A,B, 154, 158A,B,C, 165A,B,C, 173

Engineering I, 3A,B

ME 152A,B, 157, 170A,B,C, 175, 180

If any non-Letters and Science course has been accepted as a part of a student's major program, at the time of graduation this course will be applied to the Letters and Science unit requirements as appropriate.



College of Engineering

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College of Engineering

In January 1961 The Regents of the University of California authorized the establishment of the School of Engineering at the University of California, Santa Barbara. In July 1966 the School was redesignated as a College of Engineering. Students have been enrolled since 1961 and several programs are now being offered.

In 1973-74 offerings in the College include undergraduate programs in Chemical, Electrical, and Computer Science, Mechanical and Nuclear Engineering at all levels. An individual major option is also available. Graduate courses leading to the Master's degree and the Doctor of Philosophy degree are offered in Chemical, Electrical and Mechanical Engineering. (See *Graduate Division Announcement* and *Bulletin of the College of Engineering*.)

No engineering examinations are required for admission to either the lower or upper division of the engineering programs at the University of California, Santa Barbara.

In general a minimum of four years will be necessary to complete the requirements for the Bachelor of Science Degree in Engineering. Completion of the four-year program should provide adequate background for the student to start his professional career or to enter graduate programs in engineering.

The Program of Depth requirements of the College of Engineering at UCSB are designed to provide for (1) the development of an understanding of the relationships between the basic principles of physics, mechanics and mathematics, and the fundamentals of the more advanced engineering science, (2) a rigorous discipline in methods of analysis, involving the application of the foregoing sciences to the analysis and solution of engineering problems, (3) an introduction to fields of study outside of engineering to round out the intellectual development of the student.**

It should be noted that these breadth requirements consist of a certain number of units and courses covering a variety of fields. The courses so indicated may be taken at the University of California or elsewhere. The list of courses and their descriptions may be used by prospective transfer students as a guide in selecting courses of similar content and purpose offered in their own institutions. Students attending a California junior college should consult their counselors to determine which junior college courses are appropriate and are accepted in satisfaction of the breadth requirements by the college of the University in which they plan to enroll.

The curriculum in engineering offers a PROGRAM OF DEPTH which is developed through the engineering courses of the major (see courses listed under Curricula and Courses outlined in Engineering Bulletin), and a PROGRAM OF DISTRIBUTION which is attained through required courses of General Education.***

Credit by Advanced Placement Tests Students may fulfill some of the requirements

** These requirements are obtained through the courses of the major of the individual engineering departments.

*** The Program of Distribution—This program is attained through the breadth courses of General Education.

in the College of Engineering by credit allowed at the time of admission for College Entrance Examination Board Advanced Placement Tests with scores of 5, 4, or 3 as follows:

Test	Credit Allowed for Test
English	For a freshman entering the University, a test grade of 4 or above will be accepted in place of English 1A, 1B for the reading and composition requirement. A grade of 3 will be accepted in place of English 1A, and the Subject A requirement will be considered satisfied.
Chemistry	Credit will be given for Chemistry 1A.
Mathematics	Students who have Calculus Advanced Placement Tests scores of 5 or 4 should enroll in Mathematics 5A. Those with a score of 3 should enroll in Mathematics 3C.
History	Credit will be given for two history courses toward satisfaction of the General Education requirement. If Advanced Placement credit is given for U. S. History, it will also satisfy the American History and Institutions requirement.

General Education The Program of Distribution (General Education) as now required of all engineering students is as follows:

	Units
English 1A-1B*	8
Free Electives	20
Humanities	} in approximately equal portions.....
History, Social Science, Psychology	
Mathematics, Science	39
(a) Math	18
(b) Physics	9
(c) Chemistry ...	12
	TOTAL <u>90</u>

Unit and Grade-Point Requirements A minimum of 180 quarter units is required for graduation with a Bachelor of Science degree. A student's record must show twice as many grade points as there are units in the total credit value of all courses he has undertaken in the University of California. Moreover, *the student must maintain at least a C average in the field of study which constitutes a major or a minor*, and at least a C average in the upper division work taken in the major.

The attention of transfer students is directed to the fact that this minimum average must be maintained in the courses undertaken in the University of California. Half of the minimum number of units required for graduation will normally be completed in lower division status.

Admission as a Freshman The requirements for freshman admission include satisfaction of the general requirements for admission to the University.

To satisfy the *general requirements for admission to the University*, marks must average at least B grade in the following courses taken in tenth, eleventh, and twelfth grades: United States history, English, mathematics, science (with laboratory), foreign language.

Many patterns of high school subjects will satisfy these requirements. A pat-

* Speech 10 or Speech 11 may be substituted for English 1A or 1B.

tern such as the following, which includes: algebra†, 2 units; plane geometry†, 1 unit; trigonometry†, $\frac{1}{2}$ unit; and physics or chemistry (preferable both), 1 or 2 units; is strongly recommended for students who plan to study engineering at the University of California.

	<i>High School Units</i>
English.....	3
United States history	1
Algebra	2
Plane geometry	1
Trigonometry	$\frac{1}{2}$
Physics or chemistry (preferable both)	1
Foreign language	2
Other college preparatory subjects	3 $\frac{1}{2}$
	14

These subjects are prerequisite to the regular courses in the freshman engineering program and the student who is admitted without one or more of them will be obliged to defer the courses to which they are prerequisite, and thereby will become irregular and probably will be delayed in advancement to upper division status and in graduation.

Since engineering laboratory courses and engineering practice require dexterity in the use of measuring instruments, and in the operation and testing of machines and equipment, prospective students are advised to elect shop courses in high school, preferably machine shop, for at least one semester. Other skills, such as typing, are very desirable.

Professional engineering requires much oral and written communication. High school courses in English composition and public speaking contribute greatly to the foundation for college study of engineering.

Admission to the lower division of the College of Engineering does not necessarily imply advancement to the upper division at some later time. Advancement to the upper division is contingent upon the achievement of a satisfactory scholarship record in lower division courses.

Admission as a Junior Admission to the upper division of the College of Engineering will be to the particular curriculum selected by the applicant, such as electrical, mechanical, or chemical and nuclear engineering.

A sizable fraction of the University's upper division engineering students enter at the junior level from junior colleges or other institutions. Applicants for junior status from all sources, including applicants from the University's lower division, are required to meet the same minimum standard. The following requirements, which are precisely equivalent to those imposed upon continuing students, apply to admission of new juniors:

1. Satisfaction of the general requirements for admission to the University at junior level. (See statement on Admission with Advanced Standing.)

2. A satisfactory combined average based on grades in science, mathematics, and engineering subjects undertaken in college.

3. The required grade-point average in a lower division program of not less

† Or equivalent integrated courses, covering this same subject material, acceptable to the University's Office of Admissions.

than 56 semester units or 84 quarter units including partial completion of the General Education Program of the College of Engineering which includes the following minimum subject requirements:

	<i>Minimum Number of Quarter Units</i>
Analytic geometry and calculus	20
Chemistry (for engineering and science students)	12
Physics (for engineering and science students)	12
Engineering (subjects such as graphics, properties of materials, surveying, engineering measurements, statics, electronics, and computers)	15
Humanistic-social studies	9
Unspecified subjects (9 units may be in humanistic-social studies; none may be in Military Science or Physical Education; the remainder may be additional mathematics, chemistry, physics, and engineering courses)	16
	84

The above subject requirements are minimum in Engineering. The University will accept a maximum of 70 semester units or 105 quarter units of advanced credit for college courses completed at a junior college. Although students at a junior college may transfer to Santa Barbara at an earlier time, it is recommended that, to the extent the courses are available, they complete the lower division requirements in chemistry, engineering, mathematics and physics at the junior college. Questions regarding transfer may be directed to the Office of the Dean, College of Engineering, Santa Barbara.

College of Creative Studies

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College of Creative Studies

In July 1967, the College of Creative Studies was established at the University of California, Santa Barbara. Each of its students is enrolled on the evidence of talent for independent work in an art or a science. The aim of the College is to instruct these students by all the means available to a faculty of artists and scholars whose special interest is to work closely with talented undergraduates. Work in the College leads to the Bachelor of Arts degree in the College of Creative Studies. (See *Announcement of the College of Creative Studies*.)

The name is intended to suggest the nature and distinctiveness of the College. The College of Creative Studies is a separate academic unit, separately staffed and administered, with a special curriculum and a specially selected group of students. Each student is enrolled on the evidence of capacity for independent, concentrated and sustained work in one or more of the fields of study proposed by the College. There are no lecture classes in the College: all classes are tutorial or seminars.

Admission and Transfer Candidates for the College must meet the entrance requirements of the University of California. In addition, each candidate will submit for consideration specific work in evidence of his ability. Selection will be based on the work submitted, and on interviews with those candidates whose work has been judged favorably.

Each student may at any time apply for transfer into another academic unit of the University, with appropriate credit granted to his standing and achievement in the College. Any student enrolled in any other academic unit of the University, or in any college or university external to the University of California, may apply for admission to the College; if accepted, he will be enrolled in the equivalent College class.

Majors in Creative Studies Art (Painting or Sculpture), Biology, Chemistry, Literature, Mathematics, Music Theory and Composition, and Physics.

Curriculum and Requirements There are no specific required courses, but the student's program must be approved and signed by his adviser prior to filing with the Registrar's office. Each student is permitted to enroll for credit in courses offered by other colleges on the Santa Barbara campus.

Enrollment in any College course requires the consent of the instructor. Courses in the College are not classified as lower-division or upper-division; nor are there prerequisites, other than the instructor's consent for any course. (Laboratory science and lower-division foreign language courses are taken, when necessary, in the appropriate departments of the College of Letters and Science.)

Though there are no specific required courses, each student is required, during his progress toward the degree, to take a minimum of two courses in each of six curricular areas: (1) Art; (2) Life Sciences (including Psychology); (3) Literature; (4) Music (including Dance and Drama); (5) Physical Sciences and Mathematics; (6) Social Sciences (including Anthropology) and Philosophy.

(It will be noted that these areas are not all represented in the College of Creative Studies.) Courses fulfilling the area requirements may be taken either in the College of Creative Studies or in the departments of the College of Letters and Science.

Grading There are no letter grades in the College. The grading system is a combination of *Passed/Not Passed* and variable unit credit. For each course in the College the student may receive any number of units from 0 to 6: 0 is *Not Passed*, any number from 1 to 6 is *Passed*. A student may plan to do only 3 (or 1 to 2 or 4) units of work for the course by arrangement with the instructor; but in every case the instructor reserves the right to make the final determination of the unit value of the student's work in the course. Each unit of credit is counted toward graduation. 180 units of credit (under the quarter system) qualifies the student for graduation, and the degree of Bachelor of Arts in the College of Creative Studies of the University of California, Santa Barbara.

Students will be taking a considerable proportion of their courses in the departments of the College of Letters and Science. Each course taken and passed in a department of the College of Letters and Science will be credited toward the student's graduation in the amount of the fixed number of units assigned to the course. Each student is required to maintain a 2.0 grade-point average in courses taken outside the College of Creative Studies.



Graduate School of Education

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Graduate School of Education

The Graduate School of Education provides students admitted to the Graduate Division with instruction leading to recommendation for California standard elementary and secondary teaching credentials; specialized preparation in the area of speech and hearing; the supervision credential; and the pupil personnel services credential. Also offered is advanced study to a Master of Arts in Education, a Master of Education, presently available only in the area of counseling psychology, and programs leading to the Doctor of Philosophy in Education. Detailed information regarding these programs is available in the *Announcement of the Graduate School of Education, Santa Barbara* and in the Courses of Instruction section of this catalog.

California Credentials Any student who expects eventually to obtain a teaching credential should consult with advisers in the Graduate School of Education, Education-Advising Office, as early as possible in his college career.

Applications

A student may apply for graduate standing to seek recommendation for a California credential subject to the following regulations:

Admission and Readmission A student applying for admission to a credential program must be reviewed by the departments of his teaching major and his teaching minor (a minor is optional with an academic major), and the Graduate School of Education. The final decision of acceptability of each applicant is then determined by the Dean of the Graduate Division.

Preparation The student's baccalaureate training must be substantially the same as that required at Santa Barbara in the field of his teaching major. His undergraduate program must exhibit breadth in general education in such fields as the fine arts, languages and literature, the sciences, psychology, philosophy, and the social sciences. Deficiencies in general education, the major, or the minor must be removed prior to admission to student teaching.

Scholarship Admission into the elementary, secondary, restricted speech and hearing, supervision, and pupil personnel credential programs are the same as for admission into the master's degree programs. In applying these standards, the Dean of the Graduate Division may give some consideration to high scores attained on the achievement tests of a recognized national testing service.

In some instances a student may display sufficient strength in other aspects of his preparation for becoming a teacher to compensate for a grade point average that is below the foregoing minimum. An applicant who believes he might qualify as such an individual should contact the Education-Advising Office in the Graduate School of Education to discuss the matter.

Every student who has been admitted to either the elementary, secondary, supervision, pupil personnel services, or restricted speech and hearing credential programs must maintain a grade-point average of 3.0 in all upper division and graduate courses. A student who fails to maintain these standards of scholarship is subject to dismissal from the credential program.

Residence In completing his course work, the candidate must satisfy the three quarter residence requirement. One quarter of study must be completed during the regular academic year.

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Graduate Division

As a general campus of the University of California, Santa Barbara offers graduate programs leading to the degrees of Master of Arts, Master of Education, Master of Fine Arts, Master of Science, Doctor of Philosophy, and to various teaching credentials.

Applications for graduate standing will be accepted from graduates of recognized colleges and universities. The basis of selection will be promise of success in graduate status, as judged largely by the previous college record. The student's undergraduate program must have been of such character as to furnish an adequate foundation for advanced academic study. For further information see the *Graduate Division Announcement* and the *Announcement of the Graduate School of Education*.

Information All persons seeking graduate standing must apply to the office of the Dean of the Graduate Division. Each applicant must file two copies of a formal application and two official transcripts of his record from each college and university he has attended. The deadlines for application for admission and readmission are: August 1, 1973, for the fall quarter; November 1, 1973, for the winter quarter; February 1, 1974, for the spring quarter; May 1, 1974, for the Summer Session. The application blanks may be obtained from the Graduate Division, University of California, Santa Barbara, California 93106. The applications and reapplications must be accompanied by a check, money order, or a bank draft for \$20 in payment of the application fee. Payment should be made for the exact amount, and checks, drafts, or money orders should be made payable to The Regents of the University of California.

Approval of an application for graduate admission does not constitute a commitment on the part of the University to accept the applicant as a candidate for a degree or to recommend him for a credential. Certain requirements must be met while in graduate standing prior to a student's becoming formally a candidate for a degree or receiving the recommendation for a credential. Moreover, the University reserves the right to withhold or withdraw from any student the privilege of candidacy or of recommendation prior to the completion of requirements for a degree or credential.

Students admitted to graduate status will normally be enrolled in either or both of two programs: (1) that leading to a graduate degree, and (2) that leading to recommendations for the elementary, secondary, supervision, restricted speech and hearing, or pupil personnel credentials. Only with good reason will a student be admitted to graduate status without a degree or credential objective to enroll in those graduate courses to which the Dean, with the concurrence of the instructor, will admit him.

Filing Fee In certain circumstances it is now possible to receive a master's or doctoral degree without paying full fees for the quarter in which the degree is granted. Where the conditions are met, \$50.00 may be paid in lieu of registration fees for the filing of a doctoral dissertation, a master's thesis, and/or the formal final examination for the doctor's or the master's degree. This fee will be assessed against each candidate who has completed all other requirements

(including residence) for the degree and who is no longer in attendance as a registered student at the University at the time of filing the dissertation or thesis or taking the final examination. The filing fee is the same for residents and non-residents alike and will be paid after the dissertation or thesis is filed or the final examination passed. The fee is applicable *only* in cases where the student will be making *no* use of any University facility and *no* demands on faculty time other than that required for approving the dissertation or thesis or conducting the final examination (comprehensives or defense of the dissertation).

Study-List Limits The maximum programs for which graduate students and Teaching Assistants may register are given in the table below. Study lists deviating from these limits must be approved by petition to the Dean of the Graduate Division.

GRADUATE STUDENTS			TEACHING ASSISTANTS*		
Graduate Units	Under- graduate Units	Total Units	Maximum Program		
			Graduate Units	Upper Division Units	Total Units
0	16	16			
1	15	16			
2	13	15	0	12	12
3	12	15	1	11	12
4	11	15	2	9	11
5	9	14	3	8	11
6	8	14	4	7	11
7	7	14	5	5	10
8	5	13	6	4	10
9	4	13	7	3	10
10	3	13	8	1	9
12	0	12	9	0	9
11	1	12			

The Degree of Master of Arts

Majors are offered in art history, Asian studies, biology, botany, chemistry, classics, comparative literature, dramatic art, economics, education, English, French, geology, German, history, mathematics, applied mathematics, music, musical performance, physical education, physics, political science, religious studies, sociology, Spanish, speech, and zoology.

Applicants for the Master's Degree A student may apply for graduate study leading to the master's degree subject to the following regulations:

1. *Admission and Readmission.* No student may be admitted to the program for the master's degree without the approval of the chairman of his department and the Dean of the Graduate Division.

2. *Preparation.* The student's baccalaureate training must be substantially equivalent, both as to the major and in general education, to that required by the University of California.

3. *Residence.* Students in master's programs will spend three quarters in residence on the Santa Barbara campus; at least one quarter must fall within a

* Applicable also to Research Assistants.

regular session and will normally be composed predominantly of course work in the major, exclusive of thesis work. Waiver of residence requirements will be at the discretion of the Graduate Council.

4. *Program.* The program of every student who is seeking the master's degree must be approved by his department. In Plan I (Thesis) at least 30 units (include no fewer than 12 graduate units) are required. In Plan II (Comprehensive Examination) 36 units (including no fewer than 18 graduate units) are required. Students seeking the master's degree may enroll in courses numbered 198 and 199, but may not utilize them to satisfy the requirements for this degree. Lower division courses are not applied toward an advanced degree. Further information regarding graduate course requirements may be obtained from the chairman or the graduate adviser of the major department.

5. *Candidacy.* Admission to candidacy is *not automatic*. The student must indicate on his registration packet the quarter in which he intends to complete requirements for the degree. Further details may be obtained from the Dean of the Graduate Division.

6. *Standards of Scholarship.* Only upper division and graduate courses in which the student is assigned grades A, B, C, or S may be counted in satisfaction of the requirements for the master's degree. Furthermore, the student must maintain *an average* of at least three grade points per unit in those courses during his residence at the University of California as a graduate student.

The Degree of Master of Education

A program of graduate study in the Graduate School of Education leads to the award of the Master of Education degree with emphasis in counseling psychology and a state pupil-personnel services credential, or in confluent education.

The Degree of Master of Fine Arts

The Master of Fine Arts degree in studio subjects is offered by the Art Department.

The Degree of Master of Science

Graduate work leading to the Master of Science degree is offered in the fields of chemical, electrical, and mechanical engineering, and scientific instrumentation (Department of Physics).

The Degree of Doctor of Philosophy

The Doctor of Philosophy degree is offered in anthropology, art history, biology, chemical engineering, chemistry, comparative literature, dramatic art, economics, education, electrical engineering, English, French, geology, German, history, mathematics, mechanical engineering, music, philosophy, physics, political science, psychology, religious studies, sociology, Spanish, and speech and hearing sciences.

Applicants for the Doctor of Philosophy Degree An applicant for the degree of Doctor of Philosophy is subject to the following regulations:

1. *Admission and Readmission.* Admission to graduate standing in the mas-

ter's degree program does not imply entrance to the doctoral program. A student will be accepted into the doctoral program only with the approval of his department chairman and the Dean of the Graduate Division.

2. *Preparation.* In addition to the requirements for admission to graduate standing (as described above relative to the master's degree), the student's baccalaureate training must have fitted him for significant research in the subject of his specialty. Although the doctorate is a research degree, it is understood that his general education will have been substantially the equivalent of that required by the University of California and that his undergraduate major will largely have prepared him to meet the requirements of the comprehensive examination. If a student is admitted to the doctoral program with deficiencies in any of these requirements, he is expected to remove the deficiencies before advancement to candidacy.

3. *Residence.* Students in doctoral programs will spend six quarters in residence on the Santa Barbara campus; three consecutive quarters of residence must be completed in regular session prior to advancement to candidacy. Waiver of residence requirements will be at the discretion of the Graduate Council.

4. *Program.* The doctorate is a research degree granted upon the recommendation to the Graduate Dean of the student's doctoral committee after he has satisfied all requirements for the degree. It is not granted automatically upon the completion of any list of courses and residence requirements but rather reflects professional excellence as judged by his performance. The specific program by which the student will prepare himself for such performance is determined by his doctoral committee, normally under the chairmanship of his major professor. Each program will be designed to meet the individual needs of the student concerned.

5. *Candidacy.* Advancement to candidacy is earned by passing examinations in one or more modern foreign languages (if required), preliminary departmental examinations, an oral qualifying examination, and payment of a \$25 fee.

6. *Standards of Scholarship.* The rules of scholarship described above under the master's degree apply also to students in the doctoral program.

For further details the student is referred to the chairman of the department of his major subject and to the *Announcement of the Graduate Division, Santa Barbara*.



UP WITH
WOLVES

Courses of Instruction

Classification and Numbering of Courses

The Roman numerals I, II and III and the letters Yr. are placed after the unit value of courses to show when they are usually offered: I, in the fall quarter; II, in the winter quarter; III, in the spring quarter; I, II, III, in all quarters; SS., in summer session; and Yr., continued through the fall, winter, and spring quarters.

1. **Lower division courses are numbered 1–99**, and are open to all students. However, no lower division course will be given upper division credit, either toward the unit requirements or toward the upper division major requirements.

2. **Upper division courses are numbered 100–199**, and are open to all students for upper division credit, provided that they meet the necessary prerequisites for the courses. No graduate credit can be allowed for any upper division course, even if additional course work is completed.

Students in the Bachelor of Arts and Bachelor of Music degree programs in the College of Letters and Science should be certain to review the Letters and Science List of Courses described earlier in this catalog before enrolling in any upper division course to determine if the course is applicable to the 60 upper division Letters and Science unit requirement.

Independent Studies 199 Students who have completed a minimum of 125 units in the College of Letters and Science or the College of Engineering may, with the prior approval by petition of their department chairman and academic dean, undertake carefully planned and supervised independent studies courses in their major or minor. These courses are advanced courses in the sense that they extend beyond any of the undergraduate courses in any given field of study and represent the nearest approach to graduate study available to undergraduate students. Students seeking this privilege must be able to demonstrate evidence of an appropriate academic background. *Credit for Independent Students 199 courses is limited to a cumulative total of 12 units, and the limit for any quarter is 5 units.*

Graduate students may enroll in 198 or 199 courses, but they may not utilize them to satisfy the requirements of the degree.

3. **Graduate courses are numbered 200–299**, and ordinarily are open only to students who have completed at least 12 upper division units basic to the subject matter of the course. Undergraduate students of exceptional abilities may petition to enroll in graduate courses and should do so prior to pre-enrollment.

4. **Graduate courses 500–599.** The 500–599 series is reserved for *advanced* study and research. These courses are therefore not available to seniors, even on petition, as are those in the 200–299 series, and are, of course, not open to Limited Status.

AFRICAN AREA STUDIES

This program is administered through the Department of Black Studies.
James D. Smith, Ph.D., *Associate Professor of Art (Chairman)*

THE MAJOR

The major in African Area Studies is an interdepartmental major which is designed to enable the student to acquire a broad interdisciplinary background in African cultures. The major is designed to serve the interest of those students who seek a general knowledge of Africa and its peoples beyond the more restricted African offerings of individual departments or to provide those students who wish to pursue graduate study with an interdisciplinary foundation in African Studies as preparation for more specialized professional training.

Requirements for the Major

Arabic 1, 2, 3, 4, 5, and Swahili 1; or Swahili 1, 2, 3, 4, 5, 6. With the permission of the Program adviser twenty-four units of French or Portuguese may be substituted for an African language. Other exceptions to the aforementioned policy on the language requirement will be appraised on an individual basis. The language requirement may be satisfied upon demonstration of competence at the required level. The Program is to be made out by each student in cooperation with an adviser in the Department of Black Studies and will be based primarily upon needs and objectives of the individual student.

Thirty-six units of Upper Division courses selected from the following:

ANTHROPOLOGY

- No. 138—Traditional Cultures of Africa
- No. 148AB—Urbanization in Developing Countries
- No. 149—Social Change in Modern Africa
- No. 151—Fossil Evidence for Human Evolution
- No. 165—African Prehistory
- No. 172—Colonialism: Social Effects

ART

- No. 151F—African Art. Part I. The Western Sudan and West Africa east to Nigeria.
- No. 151G—African Art. Part II. Nigeria, east into the Cameroons and south to the Congo.

BLACK STUDIES

- No. 105—An Introduction to African Nationalism
- No. 115—African Philosophy
- No. 130A—French African Literature and Literary Figures
- No. 130B—French African Literature After The Independence
- No. 134—Seminar On Aime Cesaire
- No. 140—Ethnomusicology
- No. 160A—Analysis of the Racist Experience
- No. 160B—White Racism and the African Continent
- No. 160C—The African Liberation Movement

GEOGRAPHY

- No. 152AB—Africa

HISTORY

- No. 143—The Nile Quest
- No. 144—Imperialism and Resistance in Africa
- No. 147AB—African Civilizations
- No. 147Q—Special Studies in Africa: Modern African Intellectual History

POLITICAL SCIENCE

No. 146—The Political Systems of Tropical Africa

No. 147—The Politics of Developing Areas

ANTHROPOLOGY

David W. Brokensha, Ph.D., *Professor of Anthropology.*

Charles J. Erasmus, Ph.D., *Professor of Anthropology.*

Brian M. Fagan, Ph.D., *Professor of Anthropology.*

Thomas G. Harding, Ph.D., *Professor of Anthropology (Chairman of the Department).*

William Madsen, Ph.D., *Professor of Anthropology.*

Elman R. Service, Ph.D., *Professor of Anthropology.*

Albert C. Spaulding, Ph.D., *Professor of Anthropology.*

Donald E. Brown, Ph.D., *Assistant Professor of Anthropology.*

Manuel L. Carlos, Ph.D., *Assistant Professor of Anthropology.*

Michael A. Glassow, Ph.D., *Assistant Professor of Anthropology.*

Elvin J. Hatch, Ph.D., *Assistant Professor of Anthropology.*

James M. B. Keyser, Ph.D., *Assistant Professor of Anthropology.*

M. Kay Martin, Ph.D., *Assistant Professor of Anthropology.*

Mattison Mines, Ph.D., *Assistant Professor of Anthropology.*

Barbara Voorhies, Ph.D., *Assistant Professor of Anthropology.*



Donald A. Symons, M.A., *Lecturer in Anthropology.*

Jerome S. Cybulski, M.A., *Lecturer in Anthropology.*

Leslie A. White, *Research Anthropologist.*

THE MAJOR

Anthropology is the study of man in the broadest sense. It concerns itself with the biological, cultural, and historical aspects of mankind. The aim of the anthropology major is threefold: (1) to prepare for graduate school those students desiring to work professionally in anthropology, (2) to prepare students for careers either in secondary education or in social work not requiring graduate study, and (3) to provide a background in behavioral studies for students desiring a broad education in either the biological or the social sciences.

Requirements for the Major

Two emphases are recognized within the anthropology major: cultural anthropology and physical anthropology.

Cultural Emphasis

Preparation for the Major—Required: Anthropology 2 (or 101), 3, 5.

Requirements for the Major—Thirty-six units of upper division anthropology (except 101, and 103) 8–12 of which may be in related courses in other departments or subject fields, including the tutorial major (see department for acceptable courses).

Physical Emphasis

Preparation for the Major—Required: Anthropology 2 (or 101) 3, 5; Biology 1A–B, Zoology 25, 25L, 40, 40L.

Requirements for the Major—Thirty-six units of upper division anthropology (except 101, and 103) at least 12 of which are in physical anthropology. Eight to 12 units may be in Biological Sciences (see department for acceptable courses).

THE DEGREE OF MASTER OF ARTS

Requirements

1. In addition to fulfilling the general requirements for admission to graduate status, the de-

partment requires an undergraduate major in anthropology or its equivalent and successful performance on the Graduate Record "Aptitude Test."

2. A comprehensive examination will be required of all students and will serve as the comprehensive written examination for the Ph.D. degree. A "pass with honors" admits the student to the Ph.D. qualifying examination and automatically awards him an M.A. degree. A "pass" recommends him for the M.A. but disqualifies him for further graduate work in anthropology on this campus.
3. Some of the course work may be taken in other departments with the approval of the Graduate Committee.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. See No. 1 above for departmental admission requirements.
2. After the comprehensive examination (see No. 2 above) is passed with honors the candidate must prepare an acceptable dissertation research proposal in order to qualify for the Ph.D. candidacy.
3. Field work of at least three quarters duration is required before the Ph.D. can be granted. The dissertation normally is based on field research, but this is not a requirement.
4. Experience as a Teaching Assistant in anthropology is required before the Ph.D. can be granted.

TEACHING CREDENTIALS

Either a major or a minor in anthropology may serve as part of the program of studies required for an elementary or secondary credential in California. It should be noted that a few graduate schools of education may not recognize "related courses in other departments" as acceptable for the major in anthropology. A student who plans to receive a credential from an institution other than UCSB should make sure that "related fields" courses are acceptable as part of the undergraduate major, and if they are not the student should plan to take all thirty-six upper division units within the department.

ANTHROPOLOGY

Lower Division Courses

2. Introductory Cultural Anthropology.

(3) I, III. Mr. Madsen

The nature of culture: survey of the range of cultural phenomena, including material culture, social organization, religion, and other topics.

2H. Introductory Cultural Anthropology.

(1) I, III.

Following the first lecture of Anthro 2, qualified students may apply for participation in an honors seminar for an additional unit of credit or a total of four units for Anthro 2.

3. Introductory Archaeology. (4) I. Mr. Fagan

Basic principles of archaeology; human culture from man's emergence as a culture-bearing animal. Survey of selected archaeological sites in the New and Old Worlds. Largely self-paced learning.

5. Introductory Physical Anthropology.

(4) I, III. Mr. Symons, Mr. Cybulski

Human evolution: evolutionary thought, origin and antiquity of the primates, fossil man, and living races.

Upper Division Courses

*101. General Anthropology. (4) III.

The Staff

Major principles and concepts of anthropology; may serve as prerequisite for upper division courses. Not open to students who have had Anthro 2.

102. Peoples and Cultures of the World. (4)

I, II.

Mr. Keyser

A survey of representative primitive and archaic cultures of the world in evolutionary perspective.

102H. Peoples and Cultures of the World.

(1) I, II.

Mr. Keyser

After Anthro 102 begins, selected students will be invited to enroll in an honors seminar conducted by the professor. Such students will receive one unit for the honors seminar (102H) in addition to the four units for Anthro 102.

103. World Prehistory. (4) III. Ms. Voorhies

Comparison of prehistoric cultural materials from both hemispheres to demonstrate (a) processes of cultural evolution, (b) rates of cultural and human biological evolution, (c) isolation of relevant variables for explaining (a) and (b). Not open to Anthropology majors.

* Not offered in 1973-74.

104. Material Development vs. Social Man.

(4) I, III. Mr. Erasmus

Primitive "communism," 19th century utopias, and contemporary collectives and communes provide comparative data for analyzing First and Third World hopes for social "progress" in the face of technological development, competitive consumption, and limited life-space.

104H. Material Development vs. Social Man.

(1) I, III. Mr. Erasmus

After Anthropology 104 begins, selected students will be invited to enroll in an honors seminar conducted by the professor. Such students will receive one unit for the honors seminar (104H) in addition to the four units for Anthro 104.

105. Human Variation. (4) II, III.

Mr. Cybulski

Prerequisite: Anthropology 5, Biology 20 or equivalent.

An examination of traditional race concepts contrasted with an approach to human variation through the analysis of biologically adaptive traits.

106. Currents in Anthropological Thought.

(4) I, II, III. Mr. Hatch

The emergence of some of the major systems of thought in 20th century anthropology, with emphasis on the progressive refinement and diversity of the modern culture concept.

107. Psychological Anthropology.

(4) III. The Staff

Human sexual behavior, aggression, mental illness, national character, and social pathology in cross-cultural perspective.

108. Traditional Political Systems. (4) II.

Mr. Brown

A survey of anthropological contributions to the cross-cultural study of government.

110. Technology and Culture. (4) I.

Mr. Harding

The role of tools and technical knowledge in the evolution of societies. The development and spread of major technological innovations from the Palaeolithic to the Industrial Revolution. The impact of industrial technology on primitive and archaic cultures.

113. Comparative Society. (4) I. Mr. Mines

Prerequisite: Anthropology 2 or consent of instructor.

Comparative study of the structure, development, and function of human society; social, religious, political, and economic institutions.

114. Social Organization. (4) II. Mr. Mines

Prerequisite: for majors only.

Emphasis on various theories of social structure and social organization in cross-cultural perspective; kinship, social stratification, conflict and disorganization.

115. Law and Warfare in Non-Western**Societies. (4) II.** Mr. Service

The nature of law and warfare in non-Western societies. Analysis of the strategy and tactics of conflict resolution in relation to ecological, economic, and political aspects of life in non-Western societies.

116. Magic, Religion and Witchcraft. (4) II.

Mr. Madsen

Cultural parallels and variation in supernatural beliefs and practices. The origin and development of supernaturalism from primeval man through contemporary societies. The techniques of supernatural control and the relativity of "reality." Today's search for sanction and meaning.

119. Evolution of Modern Culture. (4) I, III.

Mr. Service

The development of modern corporate nation-states in anthropological perspective.

120A. Primate Behavior. (4) II. Mr. Symons

Prerequisite: Anthro 5.

Survey of social behavior in non-human primates emphasizing field studies. Course will stress function and evolution of behavior.

120AH. Primate Behavior. (1) II. Mr. Symons

After Anthropology 120A begins, selected students will be invited to enroll in an honors seminar conducted by the professor. Such students will receive one unit for the honors seminar (120AH) in addition to the four units for Anthropology 120A.

120B. Primate Behavior. (4) III. Mr. Symons

Prerequisite: Anthro 120A.

Survey of social behavior in non-human primates emphasizing field studies. Course will stress function and evolution of behavior.

125. The Female of the Species. (4) I, III.

Ms. Martin, Ms. Voorhies

Prerequisites: Anthro 2 (101) and 5.

Comparison of biological attributes of human and non-human female primates and culturally defined behavior of women in selected primitive and modern societies.

126. Theory and Method in Archaeology.

(4) I. Mr. Glassow

Prerequisites: 2, 3 or 103.

A survey of the development of archaeological theory and method, emphasizing the last 30 years and considering the nature of archaeological explanation, methods of analysis and measurement of cultural variability. A consideration of major contemporary archaeological problems and approaches to their solution.

131. North American Indians. (4) II.

Mr. Glassow

The origins, development, and attainments of New World aboriginal cultures north of Mexico.

133. Cultural Development in Mesoamerica.

(4) III. Ms. Voorhies

Prerequisite: Anthro 3 or 103.

The prehistory of Mesoamerica from earliest occupation to the sixteenth century.

134. Modern Cultures of Latin America.

(4) I, II. Mr. Carlos

Continuities and changes in the contemporary cultures of peasant and urban societies in Mexico, Central and South America. Examination of cultural institutions and values, social stratification, village and urban life, elites, urbanization and national socio-cultural integration.

135. Modern Mexican Culture. (4) I, III.

Mr. Carlos

The impact of industrialization, urbanization, technology, and modern communications on Mexican society in the Twentieth Century. Examination of contemporary urban and rural communities, class structure, value orientations, ethnic minorities, and national integration. Seminar.

136. Peoples and Cultures of the Pacific.

(4) III.

Mr. Harding

The aboriginal and modern cultures of Polynesia, Melanesia, and Micronesia.

138. Traditional Cultures of Africa. (4) I, III.

Ms. Martin

A general survey of traditional African cultures.

140. Peoples & Cultures of the Middle East.

(4) III.

Mr. Keyser

Study of contemporary Turkey, Iran, Syria, Lebanon, Iraq, Jordan, Saudi Arabia, and Egypt. Emphasis will be on local problems in development. Major source material and topics will center on, but will not be strictly confined to, the anthropological literature.

142. Peoples and Cultures of India.

(4) I, III.

Mr. Mines

Rise of Indian civilization from prehistoric times to the present; regional divisions of India; family, kin, caste groups, and village life; social organization above village level; effects of urbanization, British rule and independence.

144. Peoples and Cultures of Southeast Asia.

(4) I, II.

Mr. Brown

Survey of societies and cultures of Burma, Thailand, Laos, Cambodia, Vietnam, Malaysia, Singapore, Brunei, Indonesia, and the Philippines, with emphasis on traditional and modern social structures.

145. Far Eastern Societies. (4) I, III.

The Staff

The kinship, economic, political, and religious aspects of social organization in the recent traditional and modern societies of China, Japan, Korea, and Tibet.

148A. Plural Societies (4) II. (alternate years with 148B)

Mr. Brokensha

An examination of economic, social and political aspects of selected plural societies; emphasis on developing countries.

148A(H). Plural Societies. (1)II.

Mr. Brokensha

After Anthropology 148A begins, selected students will be invited to enroll in an honors seminar conducted by the professor. Such students will receive one unit for the honors seminar (148A-H) in addition to the four units for Anthropology 148A.

148B. Urbanization in Developing Countries

(4) II. (alternate years with 148A)

Mr. Brokensha

Growth of cities, patterns of migration, social effects of urbanization on rural and urban areas; comparative aspects.

148B(H). Urbanization in Developing

Countries. (1) II.

Mr. Brokensha

After Anthropology 148B begins, selected students will be invited to enroll in an honors seminar conducted by the professor. Such students will receive one unit for the honors seminar (148B-H) in addition to the four units for Anthropology 148B.

149. Social Changes in Modern Africa.

(4) I, II.

Mr. Brokensha

The social, economic, political, and religious institutions in selected societies from English speaking tropical Africa.

149(H). Social Changes in Modern Africa.

(1) I, II.

Mr. Brokensha

After Anthropology 149 begins, selected students will be invited to enroll in an honors seminar conducted by the professor. Such students will receive one unit for the honors seminar (149-H) in addition to the four units for Anthropology 149.

150. Advanced Physical Anthropology.

(4) III.

Mr. Cybulski

Prerequisite: Consent of instructor.

An evaluation of areas of human genetics, population genetics, serology, dermatoglyphics and anthropometry that pertain to current physical anthropology.

151. Fossil Evidence for Human Evolution.

(4) III.

Mr. Symons, Mr. Cybulski

Prerequisites: Anthro 3, 5. Biology 20 or 1A-B-C, Geology 3, and Zoology 25 recommended.

Presentation and discussion of the major pieces of the fossil evidence for human evolution. Various interpretations will be discussed in the light of evolutionary theory and with regard to the intellectual climate of opinion prevalent at times of formulation.

152A-B. Human Osteology. (4-4) I, II.

Mr. Cybulski

Prerequisites: Anthropology 3, 5, and permission of instructor.

The biology of bones and teeth: application to study of human remains from archaeological sites; morphology, paleopathology, statistical methods. Students are given practical experience in analysis. Course designed for students who intend graduate work in physical anthropology or archaeology.

154. Advanced Social Anthropology. (4)

I.

Ms. Martin

A critical review of the major theoretical and methodological contributions by American and British social anthropologists to the study of kinship, economic, legal, religious, and political systems. Course designed for students who intend graduate work in social or behavioral sciences. Seminar.

155. Social Structure and Historical

Process. (4) II.

Mr. Brown

Prerequisite: Enrollment with consent of the instructor.

A survey of approaches to the comparative study of socio-political structures and the processes of their maintenance or change. Open to majors in the social sciences and history. Seminar.

156. Military in Developing Societies.

(4) I, II. Mr. Keyser

The evolution of warfare in archaic and modern societies; role of the military in developing nations with emphasis on Asia.

160. Cultural Ecology. (4) II. Ms. Voorhies

Prerequisite: Anthro 2 or 3.

Study and comparison of the various interrelations between pre-literate societies and their total natural and social environments.

163A. Archaeology of North America.

(4) I. Mr. Spaulding

Prerequisite: Anthropology 3.

A survey of North American archaeology east of the Rocky Mountains and including the Arctic and Alaska, with an emphasis on regional developments as they relate to each other and demonstrate continuity of cultural traditions over long time periods.

163B. Archaeology of North America.

(4) II. Mr. Glassow

Prerequisite: Anthropology 3.

A survey of North American archaeology west of the Great Plains including northern New Mexico and Baja California, with an emphasis on regional developments as they relate to each other and demonstrate continuity of cultural traditions over long time periods.

164. Old World Archaeology. (4) Mr. Fagan

Prerequisite: Anthropology 3.

A survey of a single aspect of prehistory in the Old World. Normally the course will cover European and Near Eastern Stone Age archaeology. Largely self-paced learning.

165. African Prehistory. (4) III. Mr. Fagan

Prerequisite: Anthropology 3.

The prehistoric archaeology of Africa from the earliest times up to A.D. 1500. The emphasis of the course will be on the later Iron Age archaeology of sub-Saharan Africa. Largely self-paced learning.

166. Historical Archaeology. (4) II.

Mr. Fagan

Prerequisites: Anthropology 3 and consent of instructor.

The archaeology of North America from AD 1620 to 1900 is surveyed with special reference to the methods and theory of historical archaeology. Particular attention is paid to western North America and to problems of preservation and reconstruction of historical archaeological sites. Largely self-paced learning.

171. Economics of Primitive and Peasant**Societies. (4) II. Mr. Harding, Mr. Mines**

Economic life of pre-market societies and the social consequences of their involvement in a money economy.

172. Colonialism: Social Effects. (4) III.

Mr. Brokensha

Prerequisite: Consent of instructor.

Study of historical and social processes of colonialism in selected societies: influence on traditional institutions in Africa, Pacific, Asia; legacies in contemporary independent nations.

172H. Colonialism: Social Effects. (1) III.

Mr. Brokensha

After Anthropology 172 begins, selected students will be invited to enroll in an honors seminar conducted by the professor. Such students will receive one unit for the honors seminar (172H) in addition to the four units for Anthropology 172.

173. Political Anthropology. (4) II, III.

Mr. Carlos

Comparative political institutions and behavior among contemporary peasant societies. Emphasis on Latin American local level politics, and its relationship to national political integration and nation-building.

175A-B. Seminar in History of Ethnology.

(4-4) II, III.

Mr. Hatch

Prerequisites: Anthropology 2, 106, or consent of instructor.

A study of the history of anthropological theories and schools of thought, emphasizing such early writers as Durkheim, Malinowski, and Boas.

176. Seminar in Contemporary Ethnology.

(4) II.

The Staff

Discussion seminar based on intensive, critical reading of important anthropological works. Intended as preparation for graduate work; enrollment restricted to majors with a 3.5 GPA minimum.

177. Seminar on Explanation. (4) II.

Mr. Erasmus

Prerequisite: Consent of the instructor.

Seminar discussions of articles on religion, peasantry, functionalism and culture change. Students trained to analyze research objectives and explanatory procedures of anthropologists and to write forceful, brief critiques.

178. Seminar on Utopian Societies. (4) II.

Mr. Erasmus

Prerequisites: Anthro 104 and consent of the instructor.

Critical examination of futurist and utopian social schemes in the light of cultural evolution and of past and present communal and collective experiments.

179. Seminar on the Anthropology of**Symbolism. (4) II.**

Mr. Mines

Prerequisite: Consent of Instructor.

A cross-cultural inquiry into the nature and role of symbolism in human society. Discussions on non-verbal communication, myth, ethos, world view, national symbols, political ideology and the ideology of social structure as symbolic systems.

181. Methods and Techniques of Field Archaeology. (4) I, II. Mr. Fagan, Mr. Glassow

Prerequisite: Anthro 3.

Introduction to archaeological research design and field techniques of data collection; including lectures and demonstrations, excavation, and laboratory work on Saturdays.

182. Methods of Archaeological Analysis.

(4) II.

Mr. Spaulding

The interpretation and presentation of archaeological finds. Chronological sequencing; stylistic and statistical analysis; documentation; publication.

183. Field Training in Archaeology.

(8). SS only Mr. Glassow

Prerequisite: Anthro 2, 3, or equivalent, plus upper division standing and consent of instructor

Introduction to the planning and implementation of full-scale archaeological projects, with a strong emphasis on the formulation of hypotheses and the collection of data relevant to testing them. Instruction in various forms of data collection, including site reconnaissances, mapping, excavation of structural features, use of aerial photographs, and probabilistic sampling designs.

184. Seminar on North American Archaeology. (4) III.

Mr. Spaulding

Seminar in selected topics in North American prehistory.

185. Ethnographic Field Methods. (4) III.

The Staff

Introduction to aims and working methods in ethnographic field work.

193. Problems in Mesoamerican Prehistory.

(4) 1. Ms. Voorhies

Prerequisites: Anthro 133 and consent of instructor.

Seminar in selected problems in archaeology of Mesoamerica.

197. Special Courses. (1-4) I, II, III. The Staff

Prerequisites: Qualified upper division students.

Intensive studies or projects, focused on special problems related to Anthropology which are not covered by other courses. Consent of the instructor and the department chairman are required.

198. Senior Honors Readings. (2) Yr.

The Staff

May be taken three quarters (from three different staff members). Only students with a 3.5 grade average in anthropology (or special permission) may enroll. Open to students who know their own reading needs and wish to read at least 500 pages per week.

199. Independent Studies in Anthropology.

(1-5) Yr. The Staff

May be taken twice (from different staff members). Students must execute a limited research project on their own initiative. Not open to students seeking assigned research topics or to students with less than a 3.5 grade average in anthropology.

Graduate Courses**200. Summer Field School in Archaeology.**

(8). The Staff

Introduction to the planning and implementation of full-scale archaeological projects. The opportunity will be given to formulate and carry out research designs and to direct crews in data collection.

206. Current Problems in Archaeology.

(4) II. The Staff

To develop the student's sense of problem and critical faculties. Comprehensive reading lists and discussions.

207. Ecological Perspectives in Archaeology.

(4) II. (every other year) The Staff

Prerequisite: Anthropology 160.

Investigation into cultural ecological theory and its application to archaeological problems of explanation.

208. Methods and Techniques of**Archaeology. (4) I. Mr. Spaulding**

The description, analysis, and interpretation of archaeological data.

209. Problems in Mesoamerican Archaeology.

(4) III. Ms. Voorhies

A problem oriented approach to the major issues of Mesoamerican prehistory. Conducted on a seminar basis.

210. African Prehistory. (4) II. Mr. Fagan

Prerequisite: Anthropology 3.

The prehistoric archaeology of Africa from the earliest times up to A.D. 1500. The emphasis of the course will be on the later Iron Age archaeology of sub-Saharan Africa.

220. Prehistory and Ethnography of**Western North America. (4) II.**

The Staff

Prerequisites: Consent of instructor and Anthropology 163.

Seminar. Investigation of selected problems of prehistoric and historic developments in North America west of the Rocky Mountains.

221. Ecological Perspectives in Archaeological Studies. (4) II, III. The Staff

Prerequisite: Anthro 160.

Investigation of archaeological problems which may be approached from an ecological perspective.

230. History of Anthropology. (4) II.

Mr. Service

Lectures and discussion of the main problems and currents of anthropological thought from the Enlightenment in Europe through the modern academic phase.

232. Current Problems in Ethnology. (4) II.

The Staff

235A-B. Seminar in Political Anthropology.

(4) I, II. Mr. Service and Mr. Carlos

A continuous two quarter seminar. 235A is prerequisite for 235B.

237. Anthropology of Development. (4) III.

The Staff

An examination of the role of anthropology in the process of development. Theoretical and practical aspects of studies of urbanization, modernization, agriculture, health, education, labor, with emphasis on Africa.

238. Economic Anthropology. (4) II.

Mr. Harding, Mr. Mines

A critical examination of the main themes and theories of economic anthropology.

250. Method and Theory in Anthropology.

(4) I. The Staff

A discussion of general problems in anthropology.

252. Social Anthropology. (4) II, III.

The Staff

A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

253. Explanation in Anthropology. (4) II.

Mr. Erasmus

Seminar discussions of articles on religion, peasantry, functionalism and culture change. Students trained to analyze research objectives and explanatory procedures of anthropologists and to write forceful, brief critiques.

254. Ethnohistory. (4) II, III.

The Staff

A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

269. Area Studies in Anthropology. (4) Var.

The Staff

May be taken for credit as often as available from different professors emphasizing different regional areas.

270A. Problems in African Ethnology. (4) I.

Mr. Brokensha

Seminar in selected problems in ethnology of Africa.

270B. Problems in Far Eastern Ethnology.

(4) I.

The Staff

Seminar in selected problems in ethnology of the Far East.

270C. Problems in Southeast Asian

Ethnology. (4) II.

Mr. Brown

Seminar in selected problems in ethnology of Southeast Asia.

270D. Problems in South Asian Ethnology.

(4) II.

Mr. Mines

Seminar in selected problems in ethnology of South Asia.

270E. Problems in Middle Eastern

Ethnology. (4) III.

Mr. Keyser

Seminar in selected problems in ethnology of the Middle East.

270F. Problems in Oceanic Ethnology.

(4) III.

Mr. Harder

Seminar in selected problems in ethnology of Oceania.

270G. Problems in Latin American

Ethnology. (4) III.

The Staff

Seminar in selected problems in ethnology of Latin America.

280. Physical Anthropology. (4) II.

The Staff

A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

281. Current Problems in Physical

Anthropology. (4) I.

The Staff

To develop student's sense of problem and critical faculties. Comprehensive reading lists and discussions.

282. Physical Anthropology of North

American Indians. (4) II.

The Staff

Physical variation in indigenous North American populations; methods and theory in analysis; implications for the peopling of the New World. Combined lecture and seminar format.

596. Directed Reading and Research.

(2-6) I, II, III.

The Staff

Individual tutorial.

597. Individual Study of Master's

Comprehensive and Ph.D.

(2-6) I, II, III.

The Staff

Individual tutorial.

599. Ph.D. Dissertation Preparation.

(2-6) I, II, III.

The Staff

Individual tutorial.

 ART

Kurt Baer, Ph.D., *Professor of Art, Emeritus.*

Catherine C. Campbell, M.A., *Professor of Art, Emeritus.*

Mario A. Del Chiaro, Ph.D., F.A.A.R., *Professor of Art.*

William E. Dole, M.A., *Professor of Art (Chairman of Department).*

Henri Dorra, Ph.D., *Professor of Art.*

Howard C. Fenton, M.A., *Professor of Art.*

*David S. Gebhard, Ph.D., *Professor of Art (Director of The Art Galleries).*

Jacob Lindberg-Hansen, M.A., *Professor of Art, Emeritus.*

Alfred K. Moir, Ph.D., *Professor of Art.*

Robert C. Thomas, M.F.A., *Professor of Art.*

*Howard Warshaw, *Professor of Art.*

Michael A. Arntz, M.A., *Associate Professor of Art.*

Irma Cavat, *Associate Professor of Art.*

Beatrice Farwell, M.A., *Lecturer in Art.*

Sheldon A. Kaganoff, M.F.A., *Associate Professor of Art.*

² Absent on Leave Winter 1974.

Peter T. Meller, Ph.D., *Associate Professor of Art.*
 Bruce S. McCurdy, M.F.A., *Associate Professor of Art.*
^{2,3}Prudence R. Myer, Ph.D., *Associate Professor of Art.*
 Conway Pierson, M.F.A., *Associate Professor of Art.*
 William R. Ptaszynski, *Associate Professor of Art.*
¹William A. Rohrbach, M.A., *Associate Professor of Art.*
 James D. Smith, M.F.A., Ph.D., *Associate Professor of Art.*
 Miles A. Varner, M.F.A., *Associate Professor of Art.*
 Larry M. Ayres, Ph.D., *Assistant Professor of Art.*
 Gary H. Brown, M.F.A., *Assistant Professor of Art.*
 Herbert M. Cole, Ph.D., *Assistant Professor of Art.*
 Steven M. Cortright, M.A., *Assistant Professor of Art.*
^{1,2}Richard C. Dunlap, M.F.A., *Assistant Professor of Art.*
 Michael J. Dvortcsak, M.F.A., *Assistant Professor of Art.*
 David M. Kunzle, Ph.D., *Assistant Professor of Art.*



Corlette B. Walker, Ph.D., *Lecturer in Art*

THE MAJOR

The undergraduate program in art is directed toward a B.A. degree in either Art History or Studio and includes courses in both areas. It is designed primarily to serve three purposes: to provide the undergraduate with a thorough and comprehensive basic training in art as a humanistic activity; to provide students who wish to become practicing artists with the foundations which will prepare them for graduate work and professional schools; and to offer basic training to students who look forward to graduate training as professional historians of art or critics.

The major in art requires the completion of the general education requirements. **ART MAJORS MAY NOT FULFILL GENERAL EDUCATION REQUIREMENT 3C WITH ART COURSES.** The major also requires certain basic lower division courses as prerequisites to more advanced work. Within the major, students choose an emphasis in painting, in sculpture, in printmaking, in ceramics or in the history of art.

All art majors are required to take History 4A–B–C (European History); it is also recommended that they take Philosophy 136 (Aesthetics).

Art majors who plan to enter the teaching field at the junior high and senior high levels are encouraged to select a studio emphasis, rather than art history. They are further advised to choose a wide range of courses covering as many areas in studio as possible.

Discussion sections for art history courses will be held at the discretion of the Instructor.

For further details regarding course offerings, check with Art Department office.

Exceptions to art departmental requirements may be made by petition through the Art Department Office.

Requirements for the Major

History Emphasis

Preparation for the Major: Required 23 units in lower division courses: 6A–B–C, (12 units), and 8 units of 6D or 6E or 6F, or Art I and 3 units of any *one* of the following: Art 10, 12, 14, 16 or 18.

The Major: Satisfactory completion of 40 units in upper division courses: 152F; 1 course each from: 153 series; 155–156 series; 157–158 series; 159–160 series; 1 course in either the 151, 161, 181, 182 or 183 series and 16 units of art upper division history electives.

Art history majors may select any 8 units of the foregoing on a P/NP basis.

¹ Absent on Leave Fall 1973.

² Absent on Leave Winter 1974.

³ Absent on Leave Spring 1974.

For the present, art history majors will demonstrate reading competence in one of the following languages: French, German, Italian or Spanish; or, complete course three in one of those languages (or equivalent).

Studio Emphasis

Preparation for the Major: Required 32 units in lower division courses; 6 courses from Art 10, 12, 14, 16, 18, 19A or B or C (18 units); Art 30 (6 units); and Art 6 Series (8 units).

The Major: Satisfactory completion of 32 units from courses Art 100, 105, 110, 114, 115, 119, 120 or 190 (Art 190 and 119 must be taken with consent of instructor). Electives: Twelve units of art history (4 of which may be lower division). Upper division studio majors must declare an emphasis in painting, sculpture, printmaking or ceramics. Completion of the emphasis requires 4 courses within one of these areas.

Studio majors may take any 8 units of their requirements P/NP.

NOTE: *The Art Department recommends that 4 additional units of upper division art history electives be taken by those students with a studio emphasis who plan to enter a graduate school. In studio classes, the department requires three hours of work each week for each unit of credit.*

THE DEGREE OF MASTER OF ARTS

Requirements

Applications for teaching assistantships must be received in the Graduate Division by February 15th.

1. Candidates usually present a bachelor's degree in art with the emphasis in the history of art and with at least a "B" average, and will comply with the requirements listed in the Graduate Division Announcement.

2. A reading knowledge of one, or two at the option of the department, of the following languages must be demonstrated: French, German, Spanish, Italian, Japanese, Chinese, Greek, or Latin. The language or languages selected for examination must be instrumental to the candidate's field of specialization. The examination(s) is ordinarily taken before the end of the first year.

3. The student may opt for the University's Plan I or Plan II.

Plan I: a minimum of 30 units and thesis. At least 16 units must be graduate seminars in art history; of these, at least 8 units must be in two fields outside the student's major field. These fields are: *Primitive, Pre-Columbian, Asian, Ancient, Early Christian and Medieval, Renaissance, Baroque and Rococo, Nineteenth and Twentieth Centuries, Art of the United States and Architecture*. The remainder must be taken in upper division undergraduate courses and graduate courses approved by the individual and graduate advisers. The student must also present a thesis demonstrating his familiarity with the available literature on his topic and his ability to make a lucid and scholarly presentation.

Plan II: a minimum of 36 units to be approved by the individual and the graduate adviser and a comprehensive examination. At least 18 units must be taken in graduate courses (16 of these units must be graduate seminars in art history; 2-6 units may be taken in reading course 596MC).

The comprehensive examination will require familiarity with the whole range of art history as represented in standard survey texts; a general knowledge of two minor fields and more detailed knowledge of a major field of specialization. (See list of fields above). With the approval of the specialist in the field, the student's individual adviser and the graduate adviser a broad major field may be split into two parts, the second portion serving as a minor field.

4. Candidates demonstrating an exceptional ability, such as would be expected of a student continuing for a Ph.D., may be awarded an honors degree.

5. Students under Plan I must have completed their thesis, and students under Plan II passed their comprehensive examination, after being registered for no more than seven quarters and no later than four calendar years after enrolling in the program.

THE DEGREE OF MASTER OF FINE ARTS

Requirements

Applications for teaching assistantships must be received in the Graduate Division by February 15th.

1. In addition to fulfilling the general requirements for admission to graduate status, the department requires a Bachelor of Arts in art or its equivalent, with a superior record. The applicant must demonstrate outstanding accomplishment as a student artist by submitting slides of his work. Admission to the program is contingent upon sponsorship by a faculty member who will serve as Chairman of his Committee and who will assist the student in selecting the remaining members of the Committee. It is understood that the student will be primarily, but not exclusively, instructed by his sponsor.

2. One of five emphases must be indicated: Painting, Sculpture, Printmaking, Ceramics or Fine Arts—Mass Media. A minimum of 54 quarter units is required half of which (27 units) must be studio courses in the 500 series and 12 of which must be art history courses (upper division [100 series] are acceptable). As many as 18 units in addition to the required 54 may be taken (not mandatory) in completing the MFA thesis—project—course 593MS. Department regulations require that all graduate students do 4.5 hours of work a week for each unit of credit. Two years residency are required.

3. After completing his first year (approximately 20–30 units) the student will present his work for review by his Committee, which will report to the Department Chairman and Graduate Adviser. This review will determine which beginning students will be eligible for advancement to Candidacy.

4. It is the student's responsibility to meet with his Committee and with them to establish a project in his special area to be completed in his second year in the program. The project will consist of a group of related works in the student's emphasis and, upon completion, will be presented in the form of a one or two-man exhibition in the Art Galleries. It will be accompanied by one copy of a bound booklet containing photographs of the project, preceded by a written statement, the length and content of which will be left to the candidate with the assent of his Committee. This booklet will become a permanent part of the Art Department library.

5. It is the responsibility of the Chairman of the student's Committee to call meetings of the Committee to supervise the student's work; report his progress, and, finally, his successful completion of the aforementioned requirements to the Graduate Program Study Committee.

6. There is no foreign language requirement for the degree.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. Candidates for admission to the program must have obtained a Master's degree with honors from U.C.S.B., or show evidence of having met similar requirements at other institutions. Very exceptionally, candidates who have only a Bachelor's degree are admitted.

2. Students from other institutions take an exploratory examination to test their general knowledge during their first quarter of attendance.

3. Students will normally take 36 units of seminars and reading courses (or equivalent) recommended by the student's adviser. Seminars taken for credit towards M.A. can be counted towards fulfilling the 36 units required. Students who have shown weaknesses in their exploratory examination are usually required to take additional courses.

4. Students are expected to demonstrate their ability to write a long paper of a scholarly nature during the first year of the program. This requirement can be satisfied by submission

of their Master's thesis, or a seminar paper, or a paper especially written for this purpose. The paper will be read by the student's adviser and one other faculty member appointed by the Chairman.

5. The student must demonstrate his proficiency in German and French, and, in some fields, in another language related to his major field. Language examinations will be given at the end of the first year.

6. The faculty will review the work of each student at the end of the first calendar year and may recommend his withdrawal.

7. On the recommendation of the student's adviser and the Graduate Adviser, but no later than ten quarters or a maximum of four calendar years after the start of the program (proportionately more if the student is enrolled on a part-time basis), the student applies for advancement to candidacy. At this time he submits an outline of his proposed dissertation and his research program to the Graduate Adviser.

8. The student then takes two examinations:

- a. A written examination in two minor fields, one related to the student's major field, and the other unrelated to it. This examination will be administered by members of the department. It can only be taken twice. Upon passing this examination, the student will be allowed to take:
- b. The oral qualifying examination administered by three members of the department and two members of other departments appointed by the Graduate Council, forming the doctoral committee.

9. The dissertation carried out under the director of the doctoral committee, must be an original contribution to the field of art history. The candidate must defend it orally before the doctoral committee.

10. The dissertation must be submitted no later than five calendar years after advancement to candidacy.

TEACHING CREDENTIALS

A major in art may serve as an appropriate part of the program of studies required for a secondary teaching credential in California. Applicants for a U.C.S.B. recommended credential are required to submit a portfolio of selected works. An interview with the credential adviser is also expected.

Successful completion of the M.A. or M.F.A. degree is required for the issuance of the Community College teaching credential. Additional information is given in the *Graduate School of Education Announcement*.

STUDIO ART

ART STUDIO FACULTY

Mr. Gary Brown—*Painting and Drawing*
 Mrs. Irma Cavat—*Painting and Drawing*
 Mr. William Dole—*Painting and Drawing*
 Mr. Richard Dunlap—*Painting and Drawing*
 Mr. Michael Dvortcsak—*Painting and Drawing*
 Mr. Howard Fenton—*Painting and Drawing*
 Mr. William Ptaszynski—*Painting and Drawing*
 Mr. William Rohrbach—*Painting and Drawing*
 Mr. Howard Warshaw—*Painting and Drawing*
 Mr. James Smith—*Art Education/Painting*

Mr. Robert Thomas—*Sculpture*
 Mr. Miles Varner—*Sculpture*

Mr. Steven Cortright—*Printmaking*
 Mr. Bruce McCurdy—*Printmaking*

Mr. Michael Arntz—*Ceramics*
 Mr. Sheldon Kaganoff—*Ceramics*
 Mr. Conway Pierson—*Ceramics*

Lower Division

Lower Division Art Studio Majors will be required to take six quarters of courses from the Art 10, 12, 14, 16, 18 and 19 series, at three units per course. A course may be repeated up to a maximum of two times within a given area. The areas covered will include painting (Art 10), sculpture (Art 12), printmaking (Art 14), ceramics (Art 16) and drawing (Art 18). Courses in these areas will be offered every quarter. In addition, and on an irregular basis, courses in photography (19A), film (19B) and experimental projects (19C) will be offered.

In Studio Classes, the department requires three hours of work each week for each unit of credit.

Upper Division

Upper division Studio Majors will be required to take 32 units of studio work at 4 units per course with the studio faculty. The Art Department recommends a minimum of three quarters continuous study with a single faculty member.

Upper division students must declare an area of emphasis from Painting, Sculpture, Printmaking or Ceramics. Completion of the emphasis requires a minimum of four courses within a given area.

The studio courses may include combinations of subjects and media and will be defined in a syllabus which will be available to the student through the Art Department office. In this syllabus each faculty member will describe how he intends to conduct his class, what kinds of ideas or problems he will cover, what materials he intends to have his students work with, etc. This will be an attempt to clarify the content of each faculty studio course so that students will have a more meaningful basis by which to choose classes.

Lower Division Courses

Courses 10, 12, 14, 16, 18 and 19 series may be repeated for credit up to six units. Department recommends a repeat from a different instructor. Exceptions require Instructor's permission.

10. Lower Division Painting. (3) Year.

The Staff

Designed for Majors.

Introductory problems in various painting media such as water color, acrylic and oils. Fundamentals of color theory and composition. Techniques on various supports, grounds and paint application.

12. Lower Division Sculpture. (3) Year.

Mr. Thomas, Mr. Varner

Designed for Majors.

An introduction to sculptural problems and techniques dealing with traditional spatial concepts. Emphasis will be on a variety of sculptural materials used to realize these concepts.

14. Lower Division Printmaking. (3) Year.

Mr. Cortright, Mr. McCurdy

Designed for Majors.

Recommended preparation: 3 units of Art 18. Introduction to printmaking; emphasis on technical fundamentals and conceptual aspects of graphic arts. Processes of intaglio and lithographic printing will be emphasized.

16. Lower Division Ceramics. (3) Year.

Mr. Arntz, Mr. Kaganoff, Mr. Pierson

Designed for Majors.

Introduction to clay as a medium with emphasis on form. Lectures on clays, clay bodies, glazes and a general survey of ceramics history. Techniques of throwing, handbuilding, glazing and firing will be covered.

18. Lower Division Drawing. (3) Year.

The Staff

Designed for Majors.

Introductory problems in two-dimensional representation with various drawing media, including structural and symbolic implications of the human form. Emphasis on organization of vision and thought in terms of drawing techniques and materials.

*19A. Lower Division Photography. (3).

The Staff

Designed for Majors.

Exploration of photography as a means of artistic expression and showing its relationship to other art media.

*19B. Lower Division Film Techniques. (3).

The Staff

Designed for Majors.

Introduction to various cinematic processes including film and video-tape.

* Yearly schedule varies—check with department.

***19C. Lower Division Experimental Projects.**
(3). The Staff

Designed for Majors.
Study and use of new and advanced materials and techniques including those reflecting contemporary technological developments in science and industry.

***21. Beginning Painting.** (3) The Staff
For non-majors only. Composition in color; various media.***24. Beginning Drawing.** (3) The Staff
For non-majors only. Drawing in various media including the use of the human figure.***25. Beginning Ceramics.** (3) Mr. Arntz,
Mr. Kaganoff, Mr. Pierson
For non-majors only. Fundamentals and techniques of ceramics.**30. Studio Concepts.** (2) Year. The Staff
Designed for Majors.
Analysis of art principles as relative to studio practice and visual perception. Course examines underlying philosophies of artists and broad cultural trends demonstrated in artistic styles. *Must be repeated for credit up to 6 units.***Upper Division Courses**

The specific concepts, techniques and philosophy of teaching in courses 100 through 120 will vary according to the individual instructor. A syllabus of each instructor's courses will be available in the Art Department Office.

Courses 100, 105, 110, 114, 115, 119 and 120 may be repeated for credit.

100. Upper Division Painting and/or Drawing. (4) Year. The Staff

Prerequisite: 3 units of Art 10.
Problems emphasizing development of personal expression in painting and drawing; various media. Consideration given to historical painting; trends of contemporary painting and relationship of drawing to painting.

May be repeated more than once in a quarter, but must be from a different instructor.

105. Upper Division Sculpture. (4) Year. Mr. Thomas, Mr. Varner

Prerequisite: 3 units of Art 12.
First year: more complex spatial problems; working with a limited number of sculptural materials with emphasis on competency in handling two of these materials. Second year: advanced work in sculptural media; concentration on development of personal sculptural ideas.

May be repeated more than once in a quarter, but must be from a different instructor.

110. Upper Division Printmaking. (4) Year. Mr. Cortright, Mr. McCurdy

Prerequisite: 3 units of Art 14.
Problems in printmaking including advanced technical processes and color in intaglio and lithographic printing. Emphasis on developing individual competency, both technically and conceptually, through assigned projects and supervised independent study. Drawing as related to graphics will be stressed.

May be repeated more than once in a quarter, but must be from a different instructor.
C-Cortright M-McCurdy

114. Fine Arts—Mass Media. (4) Year.

Mr. Warshaw
Prerequisite: 6 units of Art 18 or consent of instructor.
Offset lithography as a technique for the creation of original graphic works of art. May be repeated for credit.

115. Upper Division Ceramics. (4) Year. Mr. Arntz, Mr. Kaganoff, Mr. Pierson

Prerequisite: 3 units of Art 16.
Investigation at an individual level of raku, low fire, salt and high fire range. Lectures and problems relating to technical aspects of ceramic chemistry. Personal control of form from clay body, fabrication, glazing, to and including firing.
May be repeated more than once in a quarter, but must be from a different instructor.

***119. Media for Visual Communication.** (4) Mr. Smith

Prerequisite: Consent of instructor.
A laboratory course stressing experimentation, creation and use of multi-image projection materials. May be repeated for credit.

***120. Upper Division Photography.** (4) Mr. Ptaszynski, Mr. Rohrbach

Prerequisite: 3 units of Art 19.
Exploring photography as artistic expression and its relationship to other art media. May be repeated for credit.

190. Senior Project. (4) Year. Studio Faculty
Prerequisites: Completion of at least 6 U.D. studio courses (24 units). Permission of Instructor and Chairman of Department, by petition.

Advanced study to be taken with the consent of a faculty member within the area of emphasis and with whom the student has worked at least one quarter previously. The project will stress the culmination of the student's development as an undergraduate.

* Yearly schedule varies—check with department.

ART HISTORY FACULTY

Mr. Mario Del Chiaro—*Ancient Art*

Mr. Henri Dorra—*19th and 20th Century Art*

Mr. David Gebhard—*Architecture*

Mr. Alfred Moir—*Baroque Art*

Miss Beatrice Farwell—*19th and 20th Century Art*
 Mr. Peter Meller—*Renaissance Art*
 Miss Prudence R. Myer—*Asian Art*
 Mr. Larry Ayres—*Medieval Art*
 Mr. Herbert Cole—*African and Oceanic Art*
 Mr. David Kunzle—*18th Century Art and Caricature*
 Mrs. Corlette B. Walker—*18th and 19th Century Art*

ART

Lower Division Courses

- 1. Introduction to Art.** (4) Year. Miss Farwell
 A study of art as a medium of expression.

- 6A. Art Survey I Ancient Art.** (4) I.
 Mr. Del Chiaro
 From the Stone Age to the end of the Roman Empire.

- 6B. Art Survey II Medieval Art.** (4) II.
 Mr. Ayres
 From the Early Christian Period to the Renaissance.

- 6C. Art Survey III Renaissance-Modern Art.**
 (4). Mr. Moir
 From the Renaissance through Modern Art.

- *6D. Survey-Asian Art.** (4) Miss Myer
 The Arts of India, China and Japan.

- *6E. Survey-African, Oceanian, American Indian.** (4) Mr. Cole
 An introduction to the art and architecture of Africa, Indonesia, Oceania; of the American Indian and of the Eskimo.

- *6F. Survey-Architecture and Planning.** (4) Mr. Gebhard
 The architect and planner in history; technical and formal means used; individual buildings and urban plans from the past to the present will be used as examples.

- *7A. Politics in Art Since 1800** (4)
 Mrs. Walker
 Rise of the Avant-Garde in art and revolutions.

Upper Division Courses

- *150. The Visual Arts.** (4) Mrs. Walker
 Prerequisite: Upper Division standing.
 The study of visual art as a means of expression. Not open to art majors, or to students who have taken Art I.

- *151C. Arts of Oceania.** (4) Mr. Cole
 Prerequisite: Upper Division standing.
 A study of the art and architecture of Indonesia, Melanesia, Micronesia and Polynesia.

- *151D. Art of the North American Indian.**
 (4) Mr. Cole
 Prerequisite: Upper Division standing.
 A study of the stylistic forms of the prehistoric and ethnological art of North America; from Alaska to northern Mexico; from ca. 2000 B.C. to the late nineteenth century. The course will cover general as

well as specific regional styles, their relationship and pattern.

- *151F. African Art—I.** (4) Mr. Cole
 Prerequisite: Upper Division standing.
 A study of the relationship between art and life south of the Sahara. Part I: The Western Sudan and West Africa east to Nigeria. (Sequence of Part I & II—151F and 151G—preferred but not required.)

- *151G. African Art—II.** (4) Mr. Cole
 Prerequisites: Upper Division standing and consent of Instructor.
 A study of the relationship between art and life south of the Sahara. Part II: Nigeria, east into the Cameroons and south to the Congo. (Sequence of Part I & II—151F and 151G—preferred but not required.)

- *152A. Ancient Art: Egypt.** (4) Mr. Del Chiaro
 Prerequisite: Upper Division standing.
 Recommended preparation: 6A.
 The architecture, sculpture and painting of ancient Egypt from prehistoric through Roman times.

- *152B. Ancient Art: Mesopotamia and Iran.**
 (4) Mr. Del Chiaro
 Prerequisite: Upper Division standing.
 Recommended preparation: 6A.
 The architecture, sculpture and painting of ancient Mesopotamia and Iran.

- *152D. Ancient Art: Aegean Art (Bronze Age in Greece and the Aegean).** (4)
 Mr. Del Chiaro

- Prerequisite: Upper Division standing.
 Recommended preparation: 6A.
 The architecture, sculpture and painting of the Greek mainland and the Greek Aegean islands from prehistoric times to the Iron Age, ca. 1100 B.C.

- *152E. Ancient Art: Greece I (1100–500 B.C.).** (4) Mr. Del Chiaro
 Prerequisite: Upper Division standing.
 Recommended preparation: 6A.

- The architecture, sculpture and painting of ancient Greece from the Iron Age (Geometric Period) to the beginning of the fifth century Classical Period; emphasis on the Archaic Period.

- *152F. Ancient Art: Greece II (500–30 B.C.).** (4) Mr. Del Chiaro
 Prerequisite: Upper Division standing.
 Recommended preparation: 6A, 152E.

- The architecture, sculpture and painting of ancient Greece from the fifth century Classical Period through the Hellenistic Age to the advent of the Roman Empire.

* Yearly schedule varies—check with department.

***152G. Ancient Art: Ancient Italy. (4)**

Mr. Del Chiaro

Prerequisite: Upper Division standing.

Recommended preparation: 6A.

The architecture, sculpture and painting of ancient Italy from prehistoric times through the Roman Republic; emphasis on the Etruscans.

***152H. Ancient Art: The Roman Empire. (4)**

Mr. Del Chiaro

Prerequisite: Upper Division standing.

Recommended preparation: Art 6A, 152G.

The architecture, sculpture and painting of the Roman Empire from 30 B.C. to the beginning of the Christian Era, ca. A.D. 325.

***153A. Medieval Art: Early. (4)**

Mr. Ayres

Prerequisite: Upper Division standing.

Architecture, sculpture, painting and the minor arts of the Early Middle Ages in Western Europe from the fourth to the eleventh century.

***153B. Medieval Art: Byzantine. (4)**

Mr. Ayres

Prerequisite: Upper Division standing.

Architecture, sculpture, painting and the minor arts of the Byzantine world from 330 to 1453 A.D.

***153C. Medieval Art: Romanesque. (4)**

Mr. Ayres

Prerequisite: Upper Division standing.

Architecture, sculpture and painting of the Romanesque period in Western Europe from 950 to 1200 A.D.

***153D. Medieval Art: Gothic. (4)**

Mr. Ayres

Prerequisite: Upper Division standing.

Architecture, sculpture and painting of the Gothic period in Western Europe from 1150 to 1400 A.D.

***153E. Medieval Art: Italy, 13th and 14th Centuries. (4)**

Mr. Ayres

Prerequisite: Upper Division standing.

The emergence of humanistic and civic ideas in the art of the Italian Trecento and Quattrocento. A survey of large civic programs of secular and secularized ecclesiastical art of the two centuries. Sculpture, architecture and painting will be discussed.

***154B. Pre-Columbian Art of South America. (4)**

The Staff

Prerequisite: Upper Division standing.

The architecture, sculpture, ceramics, textiles and metalwork of the Andean civilizations from 3000 B.C. to 1532 A.D. will be examined from the technical, formal iconographical standpoints.

***154C. Pre-Columbian Art of Mexico and Central America. (4)**

The Staff

Prerequisite: Upper Division standing.

The course will treat all of the arts of the Mesoamerican civilizations from 1500 B.C. to 1520 A.D. with emphasis on the growth of formal traditions and the symbolism they carried.

***155A. Renaissance Art in Fifteenth Century Italy. (4)**

Mr. Meller

Prerequisite: Upper Division standing.

Fifteenth century painting, sculpture and architecture in Italy, principally Florentine.

***155B. Fifteenth Century Painting in Northern Europe. (4)**

Mr. Meller

Prerequisite: Upper Division standing.

Painting in France, Flanders and Holland.

***156A. Italy: High Renaissance. (4)**

Mr. Meller

Prerequisite: Upper Division standing.

Roman and Florentine painting, sculpture and architecture from Leonardo to the sack of Rome.

***156B. Sixteenth Century Art in Northern Europe. (4)**

Mr. Kunzle

Prerequisite: Upper Division standing.

Bosch and Bruegel; eccentrics, moralists and mannerists of 16th century Northern Europe.

***156C. Mannerism. (4)**

Mr. Moir

Prerequisite: Upper Division standing.

Analysis of the pan-European style of Mannerism in architecture, painting and sculpture.

***156D. Venetian Painting. (4)**

Mr. Meller

Prerequisite: Upper Division standing.

The evolution of Venetian painting from Jacopo Bellini to Jacopo Bassano.

***157A. Baroque Painting in Italy. (4)**

Mr. Moir

Prerequisite: Upper Division standing.

Baroque painting in Italy during the seventeenth and early eighteenth centuries.

***157B. Italian Baroque Architecture and Sculpture. (4)**

Mr. Moir

Prerequisite: Upper Division standing.

A study of the works of the major architects and sculptors active in Italy from the beginning of the seventeenth century until early eighteenth century.

***157C. Northern Baroque Art. (4)**

Mr. Moir

Prerequisite: Upper Division standing.

Architecture, sculpture and painting in Flanders, Holland and France; seventeenth and early eighteenth centuries.

***158A. Eighteenth Century Art: England. (4)**

Mr. Kunzle

Prerequisite: Upper Division standing.

Painting and sculpture in Georgian England.

***158B. Eighteenth Century Art: France and Italy. (4)**

Mr. Kunzle

Prerequisite: Upper Division standing.

Painting: Rococo to Revolution.

***158C. Neo-Classicism and Pre-Romanticism. (4)**

Mrs. Walker

Prerequisite: Upper Division standing.

Painting, sculpture and architecture in Europe from 1760-1810. The course will emphasize the theories underlying these interrelated movements, e.g. Primitivism, Exoticism, Historicism.

***159A. Art in 19th Century Culture I. (4)**

Mr. Dorra

Prerequisite: Upper Division standing.

Major trends from Goya through Courbet.

* Yearly schedule varies—check with department.

***159B. Art in 19th Century Culture II. (4)**

Mr. Dorra

Prerequisite: Upper Division standing.

Impressionism, Post-Impressionism, the Nabis, Art Nouveau.

***159C. Nineteenth Century Architecture. (4)**

Mr. Gebhard

Prerequisite: Upper Division standing.

European and American planning and architecture from 1790 through 1914. Neo-Rationalism to the beginning of the "Early Modern Movement." The course will treat the relationship between theory, structure, form and practice during the nineteenth century.

***159D. Nineteenth Century Art in England. (4)**

The Staff

Prerequisite: Upper Division standing.

English art from 1800 to 1900. Primary emphasis will be on English painting and its relation to nineteenth century continental art. Architecture and sculpture will also be considered.

***160A. 20th Century Architecture. (4)**

Mr. Gebhard

Prerequisite: Upper Division standing.

European and American architecture from 1920 to the present. Expressionism, the International Style, "Period" architecture, the Moderne and the Post World War II movements. The relationship between architecture, design, painting and the political and social scene during these decades.

***160B. Art in 20th Century Culture I. (4)**

Mr. Dorra

Prerequisite: Upper Division standing.

Fauvism, Cubism, Futurism, Expressionism and Surrealism.

***160C. Art in 20th Century Culture II. (4)**

Mr. Dorra

Prerequisite: Upper Division standing.

Surrealism and its aftermath; geometric abstraction; abstract expressionism; developments of the sixties throughout the world (op, pop, kinetic, systemic, minimal, conceptual, etc.)

***161A. American Art I. (4)**

Mrs. Walker

Prerequisite: Upper Division standing.

American art, including architecture, sculpture and painting before the Armory Show, 17th century through 19th century.

***161B. American Art II. (4)**

Miss Farwell

Prerequisite: Upper Division standing.

Survey of American Art from the Armory Show to the present, with major emphasis on development in painting and sculpture after World War II.

***161C. Art in Colonial Spanish America. (4)**

The Staff

Prerequisite: Upper Division standing.

Architecture, sculpture, painting and minor arts produced in the Spanish possessions, especially Mexico and Peru, from 1620 to 1820. The development of local tendencies and the relations to European art will be stressed.

***161D. Hispanic-American Arts. (4)**

The Staff

Prerequisite: Upper Division standing.

The arts of Latin America from the seventeenth to

the twentieth century; the flowering of regional and provincial schools; Neo-Classicism, and the development of modern forms in the international styles.

***161E. Modern Mexican Painting. (4)**

Mr. Kunzle

Prerequisite: Upper Division standing.

Emphasis on the social-realist art of the muralists Rivera, Orozco and Siqueiros.

***164A. The Landscape. (4)**

Mr. Moir

Prerequisite: Upper Division standing.

What Western European artists from the Renaissance to the present have seen in their physical environment (mainly rural but also urban), how they have recorded it, and what it means. Reading, field trips, discussion, papers.

***164B. The History of Rome as a Modern City. (4)**

Mr. Moir

Prerequisite: Upper Division standing.

A study of the evolution of the urban structure of Rome from the Renaissance to the present. The emphasis will be on the city as an evolving formal entity rather than on individual buildings or on urban sociology.

***165A. Theories of Architecture. (4)**

Mr. Gebhard

Prerequisite: Upper Division standing.

An historical analysis of the relationship between architectural theories and architecture and urban planning from the fifteenth through the twentieth century.

***165B. Islamic Architecture. (4)**

Mr. Gebhard

Prerequisite: Upper Division standing.

Islamic architecture of North Africa; of the Near and the Middle East from the eighth through the eighteenth century.

***166A. The Minor Arts. (4)**

The Staff

Prerequisite: Upper Division standing.

An historical survey of selected minor arts.

***167A. Caricature, Cartoon and Pictorial**

Satire to 19th Century. (4) Mr. Kunzle

Prerequisite: Upper Division standing.

The origins and development of satire, caricature and comic strip in the graphic arts from the Reformation to the 19th century.

***167B. Caricature and Cartoon of the 20th Century. (4)**

Mr. Kunzle

Prerequisite: Upper Division standing.

Recommended preparation: 167A.

Proliferation of cartoon and comic strip in modern society.

***168A. The History of Graphic Art. (4)**

The Staff

Prerequisite: Upper Division standing.

A survey of the history of fine prints since the invention of printmaking in the 15th century to the present. Different types of printmaking will be discussed and such great masters as Durer, Rembrandt, Goya, Daumier and Picasso.

* Yearly schedule varies—check with department.

***169. Analysis. (4)** Miss Farwell

Prerequisite: Upper Division standing.

This course is strongly recommended as an elective for those students contemplating professional work in art history.

The study of artistic form and visual perception as a tool for the art historian's study of style and expression.

***181. The Art of India. (4)** Miss Myer

Prerequisites: Art 6D or permission of instructor. Upper Division standing.

The rise and development of native styles in architecture, sculpture and painting, with emphasis on Hindu and Buddhist problems.

***182A. Early Chinese Art. (4)** Miss Myer

Prerequisite: Art 6D or permission of instructor. Upper Division standing.

Native traditions and foreign influences in the development of Chinese art from prehistoric times through the ninth century.

***182B. Later Chinese Art. (4)** Miss Myer

Prerequisites: Art 6D or permission of instructor. Upper Division standing.

Chinese art from the tenth to the eighteenth century, with emphasis on painting and the minor arts.

***183. The Art of Japan. (4)** Miss Myer

Prerequisites: Art 6D or permission of instructor. Upper Division standing.

Native traditions and foreign influences in the development of Japanese architecture, sculpture, painting and minor arts.

***184. High Culture Art of SE Asia. (4)**

The Staff

Prerequisite: Upper Division standing.

An introduction to the Hindu-Buddhist arts and architecture of Southeast Asia; areas covered will include Cambodia, Thailand, Vietnam, Laos, Indonesia and Malaysia.

***194. Special Group Studies. (2-4)** The Staff

Prerequisites: Qualified UD students and consent of Instructor and Chairman of Department.

A means of making special studies or meeting special curricular problems.

No more than 4 units per quarter and 12 units total may be taken "in lieu" of major requirements. Limited to groups of 3-12 persons.

199. Independent Studies. (1-5) Year.

The Staff

Prerequisites: Consent of instructor and previous completion of 125 units.

Advanced individual problems. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses***250A. Methods and Techniques in Art History Research. (4)** Mr. Moir

Prerequisite: Graduate standing.

Reading, and a series of discussions and research problems designed to give the student understanding of the different approaches to historical study of works of art.

***250B. Connoisseurship. (4)**

Mr. Moir

Prerequisite: Graduate standing.

Reading, discussion and practical experience in qualitative analysis of works of art, with particular emphasis on drawings, prints and medals.

***250C. Art Criticism. (4)**

The Staff

Prerequisite: Graduate standing.

Study of approaches, methods and objectives of art criticism.

***251A. Seminar on African Masks. (4)**

Mr. Cole

Prerequisite: Graduate standing.

Special research in African art.

***251B. Seminar on African Arts in Context. (4)**

Mr. Cole

Prerequisite: Graduate standing.

Special research in African art.

***252. Seminar in Ancient Art. (4)**

Mr. Del Chiaro

Prerequisite: Graduate standing.

Special research in ancient art.

252A. Seminar in Field Archaeology (8)

Mr. Del Chiaro

Prerequisites: Graduate standing; consent of instructor.

Participation in all phases of field archaeology: trench supervision; cataloging and conservation. This course takes place during summer break.

***253. Seminar in Medieval Art. (4)** Mr. Ayres

Prerequisite: Graduate standing.

Special research in medieval art.

***254. Seminar in Pre-Columbian Art. (4)**

Prerequisite: Graduate standing.

Special research in pre-Columbian art.

***255A-B. Seminar in Renaissance Art. (4-4)**

Mr. Meller

Prerequisites: Graduate standing.

Special research in Renaissance art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

***257. Seminar in Baroque Art. (4)** Mr. Moir

Prerequisite: Graduate standing.

Special research in baroque art.

***258. Seminar in Eighteenth Century Art. (4)**

Mr. Kunzle

Prerequisite: Graduate standing.

Special research in eighteenth century art with special emphasis on painting and prints.

***259A-B. Seminar in Nineteenth Century Art, (Impressionism and Post Impressionism). (4-4)**

Mr. Dorra

Prerequisite: Graduate standing.

Special research in nineteenth century art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.

***259C. Seminar in Romanticism and Realism (1800-1860). (4)** Miss Farwell

Prerequisite: Graduate standing.

* Yearly schedule varies—check with department.

- *260A-B. Seminar in European Art of the Twentieth Century. (4-4)** Mr. Dorra
Prerequisite: Graduate standing.
Special research in twentieth century art. A continuous two-quarter seminar. Individual quarters may not be taken separately for credit.
- *260C. Seminar in the Art of the Last Decade. (4)** The Staff
Prerequisite: Graduate standing.
Painting and sculpture, 1960-1970, with primary emphasis on American developments.
- *261. Seminar in American Art. (4)** Miss Farwell
Prerequisite: Graduate standing.
American painting and sculpture, 1940-1960, with primary emphasis on the formation and development of Abstract Expressionism.
- *265. Seminar in Architectural History. (4)** Mr. Gebhard
Prerequisite: Graduate standing.
Special research in the history of architecture.
- *267. Caricature, Cartoon and Pictorial Satire. (4)** Mr. Kunzle
Prerequisite: Graduate standing.
Special research in the history of caricature.
- *282. Seminar in Oriental Art. (4)** Miss Myer
Prerequisite: Graduate standing.
Special research in Oriental art.
- *591A. Directed Study in Art Education. (2-9) Year** Mr. Smith
Prerequisites: Consent of instructor and Graduate standing.
Individual Tutorial
- 591C. Directed Study for the MFA in Ceramics. (2-9) Year.** Mr. Arntz, Mr. Kaganoff, Mr. Pierson
Prerequisites: Graduate standing; consent of instructor.
Individual Tutorial.
A-Arntz, K-Kaganoff, P-Pierson.
- 591DP. Directed Study for the MFA in Drawing and/or Painting. (2-9) Year.** The Studio Faculty
Prerequisites: Graduate standing; consent of instructor.
Individual Tutorial.
- 591MM. Directed Study for the MFA in Fine Art—Mass Media. (2-9) Year.** Mr. Dvortcsak, Mr. Warshaw
Prerequisites: Graduate standing; consent of instructor.
A reflexive study of graphic ideas using the media of offset lithography and video tape.
Individual Tutorial.
- 591PM. Directed Study for the MFA in Printmaking. (2-9) Year.** Mr. Cortright, Mr. McCurdy
Prerequisites: Graduate standing; consent of instructor.
Individual Tutorial.
- 591S. Directed Study for the MFA in Sculpture. (2-9) Year.** Mr. Thomas, Mr. Varner
Prerequisites: Graduate standing; consent of instructor.
Individual Tutorial.
- *592A. Special Group Studies in Art Education. (2-9) Year.** Mr. Smith
Prerequisites: Graduate standing; consent of instructor.
A means of making special studies and meeting special curricular problems.
- *592C. Special Group Studies in Ceramics. (2-9) Year** Mr. Arntz, Mr. Kaganoff, Mr. Pierson
Prerequisites: Graduate standing; consent of instructor and chairman of department.
A means of making special studies and meeting special curricular problems.
- *592DP. Special Group Studies in Drawing and/or Painting (2-9) Year.** The Art Studio Staff
Prerequisites: Graduate standing; consent of instructor and chairman of department.
A means of making special studies and meeting special curricular problems.
- *592PM. Special Group Studies in Printmaking. (2-9) Year.** Mr. Cortright, Mr. McCurdy
Prerequisites: Graduate standing; consent of instructor and chairman of department.
A means of making special studies and meeting special curricular problems.
- *592S. Special Group Studies in Sculpture. (2-9) Year.** Mr. Thomas, Mr. Varner
Prerequisites: Graduate standing; consent of instructor and chairman of department.
A means of making special studies and meeting special curricular problems.
- *593MS. MFA Thesis Project. (2-9) Year.** The Art Studio Staff
Prerequisites: Graduate standing; consent of instructor and chairman of department.
Directed study on MFA Thesis Project. Units may not be included in the 54 program units. Overall maximum 18 units.
- 594. Special Studies in Studio Art. (4) Year.** Studio Faculty
Prerequisites: Consent of instructor; Graduate standing. Consent of graduate adviser.
A means of making special studies and meeting special curricular problems.
- *595. Group Studies. (2-6) Year.** The Art History Staff
Prerequisites: Graduate standing; consent of instructor and chairman of department.
Critical review of research in selected fields.
- *596. Reading and Research in Art History. (2-6) Year.** The Art History Staff
Prerequisites: Graduate standing; Consent of instructor and chairman of department.
- Yearly schedule varies—check with department.

Individual Tutorial. A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division prior to the appropriate quarter. Total units taken not to exceed half of those required for Master's degree.

596MC. Directed Reading and Research in Art History. (2-6) Year.

The Art History Staff
Prerequisites: Graduate standing; consent of graduate adviser.

Readings and study towards comprehensive examination for M.A. For Plan II students only.

*597D. Individual Study. (1-12) Year.

The Art History Staff
Prerequisites: Graduate standing; consent of graduate adviser.

Individual study for examination for the Ph.D. degree. Limited to 12 units per quarter and 24 units total. No unit credit allowed toward degree.

*598T. Master's Thesis Research and Preparation. (1-12) Year.

The Art History Staff
Prerequisites: Graduate standing; permission of the graduate adviser.

Research underlying the thesis; writing the thesis. No credit allowed toward degree. Plan I students only.

*599D. Ph.D. Dissertation Preparation.

(1-12) Year. The Art History Staff

Prerequisites: Graduate standing; consent of graduate adviser.

Terminal preparation of the dissertation. Maximum of 12 units total.

Related Courses in Another Department

*Education AS 390. Curriculum of Instructional Procedures and Materials Used in the Teaching of Secondary Art.

(3) I. Mr. Smith

*Education AS 392. Student Teaching: Art.

(3-6) Year. Mr. Smith

May be repeated for credit.

*Education AS 393. Problems Seminar in the Teaching of Art. (1) Year.

Mr. Smith
Prerequisites: Concurrent enrollment in Education AS 392.

*Education AE 395. Art Methods for the Elementary School. (3)

Mr. Smith

ASIAN AMERICAN STUDIES

Tetsuden Kashima, M.A., C. Phil. *Acting Assistant Professor of Sociology and Asian American Studies.*

The program in Asian American Studies was initiated in 1972 and is presently under the direction of the Dean of the College of Letters and Science. Prior to this initiation a two-year experiment with courses in Asian American Studies was sponsored by the Agency for Experimental Programs.

It is the purpose of the Program in Asian American Studies to provide a more general understanding of the Asian American experience. The goal is threefold: first, to offer Asian American students an opportunity to study and understand their heritage and history as an ethnic minority; second, to offer other students an opportunity to enrich their knowledge of the Asian American; and third, to encourage the continual gathering, development and study of new knowledge regarding Asians in America.

TEACHING CREDENTIALS MINOR

A minimum of thirty units is required including Asian American Studies 100A, 100B, 110, and 199. Selection of additional courses to complete the minor should be made from the two categories listed below in consultation with a faculty advisor.

American History and Society: At least two courses selected from History 177, 17A, 17B, Political Science 172, Sociology 45, 128, Black Studies 120.

Asian History and Culture: At least two courses selected from History 185A, 185B, 187A, 187B, Anthropology 145, Religious Studies 55, 164A, 164B, 166, 167A, 167B, Art 6D, Chinese 112, 140, Japanese 112, 140A, 140B, 140C.

Courses

100A. Asian American Experience. (4) I.

An introduction to the experience of being an Asian in America. Special focus upon a historical and sociological analysis of the origins since 1840.

* Yearly schedule varies—check with department.

100B. Contemporary Asian American Experience. (4) II.

The aim of this course is to present the Asian American experience with emphasis from 1945 to the present. The focus is upon contemporary issues, problems, progress, analysis of situations and possible solutions or outcomes centering around key ideas relating to the Asians in America.

110. Asian American Communities:**Comparative Analysis. (4) III.**

A comparative analysis of the Chinese, Filipino, and Japanese communities in the United States. The course will include as topics: origins, patterns of settlement, social structure, social organization, leadership patterns and inter-ethnic relationships.

199. Independent Studies in Asian American Studies. (1-5) I, II, III.

Prerequisites: Upper division standing and consent of instructor.

To provide special guidance for exceptional advanced students in formulating and carrying out independent projects and in writing and presenting the results.

ASIAN STUDIES*Advisory Committee*

- Robert L. Backus, Ph.D., *Assistant Professor of Japanese.*
 Donald E. Brown, Ph.D., *Assistant Professor of Anthropology.*
 Chi-yun Chen, Ph.D., *Assistant Professor of History.*
 Wilbur M. Fridell, Ph.D., *Assistant Professor of Religious Studies.*
 Chauncey S. Goodrich, Ph.D., *Associate Professor of Chinese.*
 Stephen N. Hay, Ph.D., *Associate Professor of History.*
 Immanuel C. Y. Hsu, Ph.D., *Professor of History.*
 Matthew V. Lamberti, Ph.D., *Associate Professor of History.*
 Gerald J. Larson, Ph.D., *Professor of Religious Studies (Chairman).*
 Alan Liu, Ph.D., *Assistant Professor of Political Science.*
 Mattison Mines, Ph.D., *Assistant Professor of Anthropology.*
 Prudence Myer, Ph.D., *Associate Professor of Art.*
 Raimundo Panikkar, Ph.D., *Professor of Religious Studies.*

INTERDEPARTMENTAL MAJOR

The major in Asian Studies is an interdepartmental major designed for students planning graduate study or professional careers in this area. Emphasis is placed upon providing cultural background rather than technical training. The major is therefore intended also to serve the needs of students desiring a general education with emphasis upon this important cultural area of the world. These Asian Studies include South Asia, with emphasis upon India, Pakistan, and Ceylon; and the Far East, with emphasis upon China, Japan, Korea, and the Pacific.

The program of courses is to be made out by the student in consultation with the committee in charge. Each program will be designed to meet the needs of the individual student in accordance with his educational objectives.

PREPARATION OF THE MAJOR

Students majoring in Asian Studies must take at least two years in one of the major Asian languages. Ordinarily this requirement will be satisfied by Chinese 1, 2, 3, 4, 5, 6; or Japanese 1, 2, 3, 4, 5, 6. (Students who have taken intensive language courses elsewhere and can demonstrate an equivalent level of competence, as judged by the department of Eastern Languages, may waive this requirement.) Students having special interests in South Asia may, on approval of the Committee Chairman, substitute a similar two-year sequence (or its equivalent) in one of the major languages of that region.

Students preparing for the Major must also take at least eight units of lower division work selected from the following list: Anthropology 2, 3, 5, Art 6D, Economics 1, 2, Geography 2, History 46, 81, 86, 87, 89, Political Science 45, Sociology 1.

THE MAJOR

Forty units of upper division courses must be selected from the following list (descriptions of these courses may be found under the appropriate departmental headings): Anthropology 136, 142, 144, 145, 172, Art 151C, 181, 182A-B, 183, 184, Asian American Studies 100A, Chinese 101ABC, 110A-B, 112, 120A-B, 122AB, 124A-B-C, 130A-B-C, 131, 132, 140, Economics 114, Geography 154, 195, History 145A-B, 146A-B, 180, 181, 183, 184, 185A-B,

186A-B-C, 187A-B, 188A-B, 190, 195 as (East or South Asian), Japanese 101, 105A-B-C, 110A-B, 112, 120A-B-C, 140A-B-C, Linguistics 120A, Philosophy 122, 123, Political Science 126, 131, 134, 135, 136, 137, 139, 196, Religious Studies 140A-B-C, 159A-B-C-D-E-F-J-K-L, 160, 161, 162, 163, 164A-B, 165, 166, 167A-B, 168, 194A-B (East or South Asian).

Every major must take at least four units of Asian history, to be selected from either the lower or upper division list.

THE DEGREE OF MASTER OF ARTS

Students applying for admission to the M.A. program must meet the general requirements for admission to graduate standing. Each applicant will submit a letter to the Chairman of the Advisory Committee on Asian Studies describing his preparation for the work in the program and stating the objective he hopes to attain by completing the program. Preparation may include an undergraduate degree in a relevant discipline as well as courses dealing with Asia. Moreover, some training in an Asian language is recommended. On the basis of this letter the Committee will decide whether the applicant is eligible for the program and whether an inter-disciplinary program is best suited to his needs.

Inquiries regarding admission to the M.A. program in Asian Studies should be sent to Chairman, Advisory Committee on Asian Studies, or Graduate Division, University of California, Santa Barbara, 93106.

Students admitted to the M.A. program may pursue the degree under Plan I or Plan II of the Graduate Division of the University of California, Santa Barbara.

Plan I

The student must complete thirty units of upper-division and graduate work, fulfill the language requirement, and write a thesis. The thirty units include not less than twelve units of graduate work taken in at least two departments.

Courses in one Asian language pertaining to the region of the student's interest must be taken in each quarter (4 units a quarter) until the required units of regular coursework are completed. But in no case will less than twenty-four units of one language (including lower-division units) be accepted as fulfilling the language requirement. Upper-division language units in excess of the minimum twenty-four may be counted up to eight units toward completion of the required units of regular coursework. The language requirement will be waived for a student who comes into the program with sufficient competence in an Asian language to enable him to use it in his regular course work, and will be considered fulfilled at any stage in the program at which the student achieves such competence.

No student will be allowed to choose Plan I unless he is capable of doing some of his thesis research in an Asian language pertaining to the region of his interest.

The student may choose his own thesis adviser, but the finished thesis must be approved by a committee consisting of the thesis adviser and two additional faculty members appointed by the Chairman of the Committee on Asian Studies.

Plan II

The student must complete thirty-six units of upper-division and graduate work, fulfill the language requirement (same as Plan I), and pass a comprehensive examination. The thirty-six units include not less than eighteen units of graduate work taken in at least two departments.

A student who elects Plan II, while he need not have mastered an Asian language to the level where he can use it for research, must nevertheless demonstrate by at least a "B" average in his language courses that he can deal effectively with the structural and semantic problems of the language he is studying and is capable of pursuing this study in the future by his own efforts. He must also demonstrate an ability to do research and to write intelligibly by submitting to the Committee on Asian Studies two term papers written for any of his graduate courses. After approval by the Committee he will be permitted to go on to the comprehensive examination, where he will be required to prove both a factual and interpretive understanding of the region of this interest based on extensive reading. The comprehensive examination will be administered by an examination committee appointed by the

Chairman of the Committee on Asian Studies, and will cover the major course work of the student.

GRADUATE COURSES

In addition to the upper division courses listed above under THE MAJOR, graduate students may also take courses from among the following: Anthropology 270B-C-D, Art 282, History 201AS, 280, 281, 285, 288, 596, Political Science 285, 286, 288, 289, Religious Studies 201, 253, 254, 255, 257, 596.

BIOLOGICAL SCIENCES

- ^{1,2}John A. Carbon, Ph.D., *Professor of Biochemistry*.
 James F. Case, Ph.D., *Professor of Zoology*.
 Vernon I. Cheadle, Ph.D., *Professor of Botany*.
 Joseph H. Connell, Ph.D., *Professor of Zoology*.
 Raymond B. Cowles, Ph.D., *Professor of Zoology, Emeritus*.
 James Cronshaw, Ph.D., *Professor of Biology*.
 John E. Cushing, Ph.D., *Professor of Immunology*.
 Demorest Davenport, Ph.D., *Professor of Zoology*.
 Barbara B. DeWolfe, Ph.D., *Professor of Zoology*.
^{1,2}Alfred W. Ebeling, Ph.D., *Professor of Zoology*.
 Ellis Englesberg, Ph.D., *Professor of Microbiology*.
 Mary M. Erickson, Ph.D., *Professor of Zoology, Emeritus*.
 Katherine Esau, Ph.D., *Professor of Botany, Emeritus*.
 Aharon Gibor, Ph.D., *Professor of Biology*.
 Garrett Hardin, Ph.D., *Professor of Human Ecology*.
 W. N. Holmes, D.Sc., Ph.D., *Professor of Zoology*.
 Helen E. Keener, Ph.D., *Professor of Biology, Emeritus*.
 Maynard F. Moseley, Ph.D., *Professor of Botany*.
 Cornelius H. Muller, Ph.D., *Professor of Botany*.
 Walter H. Muller, Ph.D., *Professor of Botany*.
 Michael Neushul, Jr., Ph.D., *Professor of Botany*.
 Elmer R. Noble, Ph.D., *Professor of Zoology*.
 Dale M. Smith, Ph.D., *Professor of Botany*.
 Beatrice M. Sweeney, Ph.D., *Professor of Biology*.
 George Taborsky, Ph.D., *Professor of Biochemistry (Chairman of Department)*.
 James L. Walters, Ph.D., *Professor of Biology*.
 John R. Haller, Ph.D., *Associate Professor of Botany*.
^{1,2}Robert W. Holmes, dr. philos., *Associate Professor of Marine Biology*.
 Jack L. King, Ph.D., *Associate Professor of Biology*.
 Philip C. Laris, Ph.D., *Associate Professor of Biology*.
 Nancy L. Lee, Ph.D., *Associate Professor of Microbiology*.
 William W. Murdoch, Ph.D., *Associate Professor of Biology*.
 Henry I. Nakada, Ph.D., *Associate Professor of Biochemistry*.
 Eduardo Orias, Ph.D., *Associate Professor of Biology*.
 Ian K. Ross, Ph.D., *Associate Professor of Biology*.
 Edward L. Triplett, Ph.D., *Associate Professor of Biology*.
 Adrian M. Wenner, Ph.D., *Associate Professor of Biology*.
 Marvin Cassman, Ph.D., *Assistant Professor of Biochemistry*.
²James J. Childress, Ph.D., *Assistant Professor of Zoology*.
 Steven K. Fisher, Ph.D., *Assistant Professor of Biology*.
 Richard P. Howmiller, Ph.D., *Assistant Professor of Biology*.
 David M. Kohl, Ph.D., *Assistant Professor of Biology*.
 Ching Kung, Ph.D., *Assistant Professor of Biology*.
 Allan Oaten, Ph.D., *Assistant Professor of Mathematical Biology*.

¹ Absent on Leave Fall 1973.

² Absent on Leave Winter 1974.

Stephen I. Rothstein, Ph.D., *Assistant Professor of Biology.*

Bruce A. Wales, Ph.D., *Assistant Professor of Botany.*



G. Whitney Baines, M.A., *Lecturer.*

Steven M. Horvath, Ph.D., *Professor of Physiology.*

Ralph N. Philbrick, Ph.D., *Research Associate in Botany.*

Marta S. Walters, Ph.D., *Research Associate in Biology.*

BASIC PREPARATION FOR ALL MAJORS

By the time of precounselling for the junior year, each student is expected to select one of the seven upper division majors described below.

All students, regardless of the major which they intend to choose, must complete the following introductory courses (58-76 units in the lower division): Biology 1A-B-C, Chemistry 1A-B-C, Organic Chemistry, Physics and Mathematics as required by the individual majors.

Chemistry 1A-B-C should be taken in the freshman year. It is recommended that Biology 2A-B-C be taken concurrently. Biology 1C may be taken during the freshman year with the consent of the instructor. Students with a weak mathematics background should make up this deficiency by completing Intermediate Algebra and Trigonometry by correspondence through the University Extension, preferably during the summer preceding enrollment in the university.

Biology 20, 20Z, or Botany 20 may be substituted for Biology 1A either by receiving a grade of A for one of these courses or by passing a written final examination for Biology 1A.

Further specific requirements or recommendations concerning the lower division program are presented under the several upper division majors described below.

COMMON REQUIREMENTS FOR ALL MAJORS

As a requirement for graduation all students will be required to take the courses listed under Area A, and all students, except those who choose the Biochemistry-Molecular Biology Major, will be required to take at least one course* from Area B, and at least one course* from each of two of the three Areas C, D, and E. (*The corresponding laboratory courses must be taken in all cases where it is indicated that concurrent enrollment in the laboratory is required). Substitutions in the upper division program of any major may be made only with the approval of the Chairman of the Department.

The five areas and elective courses within each follow:

Area	Pertinent Courses
A. Genetics	Biology 130A-B.
B. Physiology	Biology 101; Biology 105; Botany 120, 121; Zoology 101, 109, 142A-B.
C. Development	Biology 103, 160, 174; Botany 171; Zoology 100.
D. Ecology	Biology 145A; Botany 140, 141, 142; Zoology 113A-B, 140.
E. Diversity of Form and Structure	Biology 104A-B, 131, 145B, 173; Botany 103A-B, 110, 111, 151, 170; Zoology 105, 107, 111, 112A-B, 117AL-BL, 161.

Specific courses to fulfill the requirements above and/or additional requirements follow under the various upper division majors. The following courses are not accepted as fulfilling requirements in the major: Zoology 25, 40.

The requirements for the Biochemistry-Molecular Biology major do not come under the common requirements listed here, and are described separately below.

SPECIAL REQUIREMENTS FOR UPPER DIVISION MAJORS

Aquatic (Marine and Freshwater) Biology

This major provides background preparation for those students specifically interested in the areas of marine biology, biological oceanography, limnology, ecology, or population biology. The primary emphasis is on the similarities and differences in marine and freshwater habitats, including studies of populations, diversity, morphology and physiology or organisms in these habitats.

Specific Requirements: Biology 1A–B–C; Chemistry 1A–B–C; Chemistry 6A–B and 8A–B or 130A–B–C, and 6A–B; Physics 6A–AL–B–BL–C–CL or 8A–AL–B–BL–C–CL; Mathematics, one of the following options: 1) Mathematics 34A–B and either 34C or Biology 136A; 2) Mathematics 11A–B; 3) Mathematics 3A–B–C. (Most graduate schools prefer one year of calculus, option 3 of the above.)

Recommended Courses: Chemistry 113A–B–C; Biology 104A, 104AL; Biology 136B; Biology 145CL; Chemistry 5; and a course in Physical Geology. (Consult your adviser, as different fields in aquatic biology have different needs.)

Upper Division Biology: 36 upper division units in Biological Sciences which shall include Biology 145A (Biology of Aquatic Environments) and at least one course from each of the four categories, A–D below, and two disparate courses from category E. This selection will complete the “COMMON REQUIREMENTS FOR ALL MAJORS” listed above.

A. Genetics:	Biology 130 A–B
B. Physiology:	Biology 101, 105; Botany 120–120L; Zoology 101, 109, 143
C. Development:	Biology 160; Botany 171–171L; Zoology 100–100L
D. Ecology:	Zoology 140
E. Diversity:	Biology 145B–BL, 145CL, 155; Botany 170–170L; Zoology 105–105AL, 111, 112A–B, 115–115L or 115–117AL, 161–161L

Biochemistry-Molecular Biology Major

Designed to prepare students interested in gaining an understanding of the characteristics of the molecules and the molecular mechanisms involved in living systems. Recommended especially for those planning graduate work in biochemistry, molecular biology, or microbiology.

Specific Requirements

Lower division courses: Biology 1A–B–C; Chemistry 1A–B–C; Organic Chemistry 130A–B–C (upper division major credit), 6A–B–C; Mathematics 3A–B–C, or 11A–B, and 4A (in addition Math 4B is recommended); Physics 8A–AL–B–BL–C–CL or 6A–AL–B–BL–C–CL.

Upper division courses: 36 upper division units including Biology 130A–B (Genetics), 108A–B–C, and 109L (Biochemistry), Physical Chemistry 113A–C–D (Phys. Chem. 113B is recommended), plus one additional upper division course in Biological Sciences to total at least 36 upper division units distributed between biology and chemistry.

Biological Sciences Major

The purpose of this major is to give the student the flexibility to program the curriculum in Biological Sciences to meet chosen requirements. According to the student's need the curriculum chosen may be specialized or broad. Each student in this program will be assigned a major adviser. As soon as possible and no later than the end of the sophomore year, the student, in consultation with his major adviser will outline a program of study for the major. This program will become part of the student's file. It will be the responsibility of the student to consult his major adviser at least once a year in order to assess the progress the student is making toward the major and to review the student's program for the coming school year.

Specific Requirements

Lower division courses: Biology 1A-B-C; Chemistry 1A-B-C; Organic Chemistry 130A-B-C, and 6A-B; or 8A-B and 6A-B; Mathematics 3A-B-C or 11A-B or 34A-B-C; Physics 6A-AL-B-BL-C-CL or 8A-AL-B-BL-C-CL.

Upper division courses: A minimum of 36 upper division units in biological and related sciences so long as the "*COMMON REQUIREMENTS FOR ALL MAJORS*" are met.

Botany Major

Primarily designed to provide an understanding of plant structure and development, diversity, evolutionary relationships, functional systems, and environmental relationships.

General Requirements: Biology 1A-B-C, 130A-B, and 107 (& lab) or 137; Botany 103A-B, 120 (& lab); Chemistry 1A-B-1C; Organic Chemistry 6A-B, and 8A-B, or 130A-B-C; Mathematics 3A-B-C or 11A-B or 34A-B-C; Physics 6A-AL-B-BL-C-CL or 8A-AL-B-BL-C-CL.

Specific Requirements: A minimum of 36 upper division units to be taken in the Biological Sciences so long as the "*COMMON REQUIREMENTS FOR ALL MAJORS*" are met. One of the two following options should be followed, but exceptions may be agreed to by the student's adviser.

a) *Marine Botany:* Botany 170, Biology 145A and 145B and 173; Bot. 171 (and lab) or Biology 174, Zoology 112A (Zoology 117AL also recommended).

b) *Terrestrial Botany:* Botany 113, 140, 151 (and lab), and 110 or 111; a course in Zoology (Zoology 112A or 117BL recommended).

Only one of the following courses will be accepted towards the 36 upper division unit requirement: Biology 123, 124, 133.

Cellular and Organismal Biology Major

This program is intended for the student primarily interested in the experimental analysis of the life processes of plant and animal organisms. It is considered to be a logical pathway leading to graduate studies in cell biology, development of form and function in plants and animals and the various subdisciplines of phytophysiology and zoophysiology.

Specific Requirements

Lower division courses: Biology 1A-B-C; Mathematics 3A-B-C, 11A-B or 34A-B-C; Physics 6A-AL-B-BL-C-CL or 8A-AL-B-BL-C-CL; Chemistry 1A-B-C, 130 A-B-C (upper division credit) and 6A-B.

Upper division courses: A minimum of 36 upper division units in the Biological Sciences, including Biochemistry (Biology 108A-B-C and 109L) and Cell Structure and Function (Biology 137), so long as the "*COMMON REQUIREMENTS FOR ALL MAJORS*" are met.

Environmental Biology Major

Designed to provide the student with an understanding of the relationships of plants and animals with their physical environment and with each other, as shown at the individual, population, species, or community level, as approached through the inter-related disciplines of behavior, ecology, morphology, physiology, systematics and evolution. The location of the campus on the seashore and the close proximity of mountains and desert provide an unusual variety of marine, freshwater, and terrestrial habitats in which to work.

Specific Requirements

Lower division courses: Biology 1A-B-C; Chemistry 1A-B-C, 8A-B and 6A-B or 130A-B-C (Upper Division credit) and 6A-B; Mathematics 34A-B-C or 11A-B or 3A-B-C (a course in statistics is recommended); Physics 6A-AL-B-BL-C-CL or 8A-AL-B-BL-C-CL.

Six to nine units from Climatology, Physical Geography, Plant Geography, Geology, Paleontology or Oceanography, either lower or upper division, *are strongly recommended; and should be determined in consultation with the student's counsellor.*

Upper division courses: Botany 103A-B; 32 additional upper division units in Biological Sciences which shall include at least 8 units each from Botany and Zoology and at least one course from each of the five categories (A-E) listed below. The courses selected within these categories (A-E) will complete the "COMMON REQUIREMENTS FOR ALL MAJORS."

A. Genetics: Biology 130A-B.

B. Physiology: Biology 105; Botany 120; Zoology 101, 109, 142A-B.

C. Ecology: Biology 145A; Botany 140, 141, 142; Zoology 140.

D. Natural History: Botany 170, Biology 173; Zoology 105, 112A-B, 113A-B, 115L, 116L, 117AL, 117BL.

E. Systematics: Biology 145B; Botany 151; Zoology 161.

Only one of the following courses will be accepted towards the 36 upper division unit requirement: Biology 123, 124, 133.

Zoology Major

Primarily designed for those interested in animal form, function and environmental relationships.

Specific Requirements

Lower division courses: Biology 1A-B-C; Chemistry 1A-B-C; Organic Chemistry 130A-B-C (upper division credit), 6A-B; Mathematics 3A-B-C or 11A-B or 34A-B-C; Physics 6A-AL-B-BL-C-CL or 8A-AL-B-BL-C-CL.

Upper division courses: A minimum of 36 upper division units in the Biological Sciences so long as the "COMMON REQUIREMENTS FOR ALL MAJORS" are met. 6 to 8 units in pertinent courses in other departments may be substituted with the consent of the Chairman of the Department.

Recent Curriculum Changes

Because of the recent revisions of the curriculum of the Department of Biological Sciences, embodied in this catalog, students may experience difficulties in the interpretation of course prerequisites or in equating present courses with those of previous catalogs. These students should seek the assistance of a faculty counsellor.

Pre-Professional Programs

Pre-professional programs leading to subsequent study in agriculture, dentistry, forestry, laboratory technology, medicine, nursing, and similar professions are highly variable depending (a) upon the field, and (b) upon the professional training institution to be attended. The student should become familiar with the requirements of several institutions offering work in his specialty before discussing his program with his counsellor.

In general, students preparing for careers in medicine, dentistry, nursing, and laboratory technology will select one of the following as their major field: Biochemistry-Molecular Biology, Biological Sciences, Cellular and Organismal Biology, or Zoology.

Biological Sciences, Botany, Cellular and Organismal Biology, or Environmental Biology would be suitable for preparation for further study in agriculture and forestry.

All the majors in this department will prepare students to enter credential programs for teaching at elementary, secondary, or junior college levels. For detailed requirements, see the current Graduate School of Education Announcement. Students wishing to have counseling should inquire at the Department of Biological Sciences or the Graduate School of Education.

GRADUATE PROGRAMS

The enormous strides made in biology in this century have made possible new means of analysis of longstanding problems. In the process, the lines between traditional fields have become blurred. The organization of the department into graduate sections reflects these

developments, while building on the strong traditions of classical biology. The sections supervise graduate studies and research in their respective areas of emphasis.

- 1. Biochemistry and Molecular Biology
- 2. Cellular and Organismal Biology
- 3. Environmental and Systematic Biology
- 4. Aquatic and Population Biology

THE DEGREE OF MASTER OF ARTS

Requirements

The Department offers two plans for the Degree of Master of Arts. For further details see below.

- 1. In addition to fulfilling the general requirements for admission to graduate status, foreign students may be required to perform satisfactorily in an examination in English prior to admission.
- 2. A candidate for the master's degree must have to his credit, in addition to the general University requirements, the minimum lower and upper division requirements or their equivalents for the departmental major in the field of emphasis chosen. Students with minor deficiencies in these requirements will normally be allowed to complete them while in the graduate status.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

- 1. In addition to fulfilling the general requirements for admission to graduate status, foreign students may be required to perform satisfactorily in an examination in English prior to admission.
- 2. Prospective candidates for the degree of Doctor of Philosophy in biology normally must have the bachelor's degree in one of the biological sciences from this University, or from an institution of equivalent standing and with a preparation deemed equivalent to that required for the bachelor's degree from this University. The student who is admitted to graduate standing with deficiencies in preparation will be required to take appropriate undergraduate courses. If a student has completed a major in a subject other than the biological sciences, he is advised to consult with the department chairman.
- 3. A reading knowledge of one foreign language is required. (Usually German, French, or Russian.)
- 4. Each prospective candidate is required to take a qualifying examination administered by the department.
- 5. Each candidate must complete a doctoral dissertation under the general supervision of a committee. A final oral examination is given on the dissertation and its implications.
- 6. Ordinarily a candidate is required to serve as a Teaching Assistant for a minimum of three quarters.

Emphasis in Biochemistry-Molecular Biology

Students interested in pursuing graduate work in biochemistry-molecular biology are advised to obtain a strong background in chemistry, physics, and mathematics and to be familiar with the concepts of biology. It is recommended that the undergraduate preparation include, as a minimum, the equivalent of the following courses offered at UCSB:

BIOLOGY

General	1A, 1B, 1C.....	15
Genetics	130A, B	6
Biochemistry	108A, B, C	12

CHEMISTRY

General	1A, 1B, 1C.....	12
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Organic	130A, B, C.....	9
	6A, B, C.....	6
Physical	113A, B, C, D.....	12
MATHEMATICS	3A, 3B, 3C (4A, 4B).....	12-20
PHYSICS	6A, AL, B, BL, C, CL or 8A, AL, B, BL, C, CL.....	12-15

Applicants with strong undergraduate records, but lacking some of the preparation indicated above, may be admitted upon the condition that such deficiencies be removed early during graduate study. Thus, chemistry or physics majors with insufficient experience in biology, or students with extensive preparation in the biological sciences but inadequate training in chemistry, can often remedy these omissions subsequent to admission.

Requirements for the M.A.—(see general University and Departmental requirements).

Students will follow one of the following two plans:

Plan I: Thesis Plan—A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses in the major subject, and at least 12 will normally be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis.

Plan II: Comprehensive Examination Plan—A minimum of 36 units of upper division and graduate courses in the major subject is required, of which at least 18 units will normally be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. Satisfactory performance in a comprehensive examination will cover three of the specialized areas of graduate study listed in the Ph.D. program. Students must pass a comprehensive examination which will cover one specialized area from each of two area groups of graduate study listed in the Ph.D. program.

Requirements for the Ph.D.—(see general University and Departmental requirements).

The following is a list of specialized areas of graduate study available to the student:

Area Group A

1. Biochemistry of macromolecules
2. Metabolic Control and General Metabolism
3. Bio-organic Chemistry

Area Group B

4. Molecular Basis of Genetics
5. General Microbiology

Area Group C

6. Developmental Biology
7. Molecular Biology of Eucaryotic Cells

Students must pass a first qualifying exam, consisting of an oral research proposition to be taken at the beginning of the second year, and a second qualifying exam, consisting of (a) a comprehensive written exam or a research proposition, and (b) an oral exam immediately following, to be taken at the beginning of the third year of study. Topics for the research propositions and/or comprehensive exams are to be selected from three of the above areas, such that at least two area groups are represented; appropriate areas of study offered by another section or department may be substituted for one of the above area groups. The student's program will be arranged in consultation with his graduate committee. In order to insure adequate breadth of training, the student will be expected to take at least one course in each of the above area groups.

Emphasis in Cellular and Organismal Biology

Students interested in pursuing graduate work in this area should obtain a strong background in chemistry, physics and biology. As a guide for the undergraduate planning a career

in this area of biology it is suggested that the student acquire the knowledge and experience similar to that suggested for the undergraduate major in Cellular and Organismal Biology. Electives should be chosen which are pertinent to the student's proposed area of specialization.

Requirements for the M.A.—(see General University and Departmental requirements)

a) In addition to the general University requirements, the student must have to his credit the minimum lower and upper division courses, or their equivalents, recommended for undergraduates interested in Cellular and Organismal Biology.

b) Students will follow one of the following two plans:

Plan I: Thesis Plan—A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses in the major subject, and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis.

Plan II: Comprehensive Examination Plan—A minimum of 36 units of upper division and graduate courses in the major subject is required, of which at least 18 units must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. Satisfactory performance in a comprehensive final examination is also required. The comprehensive examination will cover three of the specialized areas of graduate study listed in the Ph.D. program.

Requirements for the Ph.D.—(see General University and Departmental requirements).

The following is a list of the specialized areas of graduate study available to the student:

1. Cell physiology
2. Development
3. Comparative physiology
4. Endocrinology
5. Neurophysiology (neurophysiology, ultrastructure, behavior, development)
6. Plant physiology
7. Ultrastructure

The student will be expected to choose one of the areas listed above as a major field of study. Two minor areas of study may be selected from either the areas listed above or some area outside the section of cellular and organismal biology. Courses approved by the student's graduate committee will be distributed in the major and two minor areas of specialization.

Emphasis in Environmental and Systematic Biology

Programs in environmental and systematic biology emphasize the biology of plants or animals in marine, freshwater or terrestrial environments.

Students intending to pursue graduate work in environmental biology must complete the equivalent of the minimum requirements of the undergraduate major in environmental biology at UCSB. Students whose interests lie primarily in botanical or zoological studies will better prepare for graduate work by completing the equivalent of the undergraduate major in botany or zoology.

Students who are admitted to one of the graduate programs with deficiencies in their undergraduate major will be expected to make these up as soon as possible following their admission.

Requirements for the M.A.—(See General University and Departmental Requirements).

A student may select environmental biology, systematics, botany or zoology as his major field. The M.A. degree may be earned by following either Plan I or Plan II as outlined below.

Plan I: Thesis Plan—A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses in the major subject and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee. No unit credit is allowed for the thesis.

Plan II: Comprehensive Examination Plan—A minimum of 36 units of upper division and graduate courses in the major subject is required, of which at least 18 units must be in the 200 and 500 series in the major subject. Satisfactory performance in a comprehensive final examination is also required. The Comprehensive Examination will cover a major and one minor area of emphasis. The major emphasis must be selected from the list given below for the Ph.D. program. The minor area may be selected from this list, or, with the written approval of the section, from other appropriate disciplines.

Requirements for the Ph.D.—(See General University and Departmental Requirements).

Each student will select, with the approval of his advisory committee, a major and two minor fields of study. The minor fields may be selected from appropriate disciplines in other sections or departments.

The following is a list of specialized areas of study offered in the section of Environmental and Systematic Biology.

1. Biochemical systematics
2. Biogeography
3. Marine algology (systematics, morphology and development)
4. Plant ecology
5. Plant physiology
6. Plant systematics and biosystematics (vascular plant)
7. Vascular plant anatomy, morphology and phylogeny
8. Vertebrate behavior
9. Vertebrate annual cycles

Emphasis in Aquatic and Population Biology

Each graduate student in Aquatic and Population Biology must meet the equivalent of the minimum requirements of one of the undergraduate majors in the Department of Biological Sciences at UCSB, including a year of calculus in college. Students with degrees in disciplines other than biological sciences also must complete these requirements.

Requirements for the M.A.—(See General University and Departmental Requirements).

Plan I: Thesis Plan—A minimum of 30 quarter units in courses in the major subject approved by the student's advisor and a thesis are required. The units may be taken in Graduate or Upper Division courses, and at least 12 must be in the 200 and 500 series in the major subject. Courses outside the major may be substituted upon written approval by the student's advisory committee.

Plan II: Comprehensive Examination Plan—A minimum of 36 quarter units in courses in the major subject of which at least 18 units must be in the 200 and 500 series and satisfactory performance in a comprehensive final examination are required. Courses outside the major may be substituted upon written approval by the student's advisory committee. The Comprehensive Examination will cover a major and a minor area of emphasis. The major emphasis must be selected from the list given below for the Ph.D. program. The minor area may be selected from this list or, with the approval of the section, from another appropriate discipline.

Requirements for the Ph.D.—(See General University and Departmental Requirements).

The student must meet all of the University and Departmental requirements for the Ph.D. degree.

The following is a list of specialized areas of graduate study in Population Biology:

1. Biology of Arthropods
2. Biological Oceanography and Limnology
3. Comparative Immunology
4. Ichthyology (systematics, morphology and ecology)
5. Parasitology

6. Population Ecology
7. Population Genetics

Each student is expected to select one of these areas as a major field of study. One minor area of study must be selected from these areas or, with the approval of his graduate committee, from any other discipline in the University.

BIOLOGY

Lower Division Courses

1A. Introductory Biology. (4) I.

Mr. Laris, Mr. Walters

Lecture, four hours. Prerequisites: Chemistry 1A-B-C, and concurrent enrollment in Biology 1AL.

Cellular morphology, cellular physiology and metabolism, genetics.

1AL. Introductory Biology Laboratory. (1) I.

Mr. Walters, Mr. Laris

Laboratory, three hours. Prerequisites: Chemistry 1A-B-C, and concurrent enrollment in Biology 1A.

Laboratory exercises in cell biology and genetics.

1B. Introductory Biology. (4) II.

Mr. Case, Mr. Noble

Lecture, four hours. Prerequisites: Biology 1A-1AL, and concurrent enrollment in Biology 1BL.

Population biology, and introduction to the major groups of animals.

1BL. Introductory Biology Laboratory. (1) II.

Mr. Case, Mr. Noble

Laboratory, three hours. Prerequisites: Biology 1A-1AL, and concurrent enrollment in Biology 1B.

Laboratory exercises in zoology and population biology.

1C. Introductory Biology. (3) III.

Mr. Moseley, Mr. Neushul, Mr. Ross

Lecture, three hours. Prerequisite: Concurrent enrollment in Biology 1CL.

Introduction to the major groups of plants and microorganisms.

1CL. Introductory Biology Laboratory.

(2) III.

Mr. Moseley, Mr. Neushul, Mr. Ross

Laboratory, six hours. Prerequisite: Concurrent enrollment in Biology 1C.

Laboratory exercises in the biology of plants and microorganisms.

Contemporary Natural Science (See Natural Science 1A-1B-1C). (4-4-4) I, II, III.

The Staff

Sequence, beginning in the fall.

2A-B-C. Special Topics in Biology for

Freshmen. (1-1-1) I, II, III. The Staff

Seminar, one hour.

Seminars by the staff concerning current research. References to review articles and the original literature will be provided. Recommended for all freshmen interested in the biological sciences.

20. Concepts of Biology. (5) I, II, III.

The Staff

Lecture, four hours; laboratory, three hours.

Unifying principles of biology; cell structure, func-

tions, and energy relations; cybernetics, natural selection, evolution; reproduction and the principles of genetics and development; nature and growth of populations. Not ordinarily open to majors in the Department of Biological Sciences for credit.

Not open for credit toward graduation to students who have completed Biology 20Z or Botany 20.

20Z. General Biology for Modern Man.

(4) III.

Mr. Childress

Lecture, three hours; laboratory, three hours.

This course will emphasize those aspects of Biology considered to be particularly relevant to a citizen in today's world. It will place emphasis on the environmental aspects of biology, but will also give an overall view of biology.

Not open for credit toward graduation to students who have completed Biology 20 or Botany 20, or Natural Science 1.

21. Vertebrate Adaptations. (4) II.

Mrs. De Wolfe

Lecture, three hours; discussion, one hour.

The study of adaptations in vertebrate behavior, form and function as a background to understanding the biology of man. Not ordinarily open to majors in the Department of Biological Sciences for credit.

Upper Division Courses

100. Biology, the University and Society.

(3) (given alternate years) Mr. Murdoch

Lecture, one hour; discussion, one hour.

An analysis of the relationships between biology, the University, and society. There will be extensive reading.

101. Cell Physiology. (3) I.

Mr. Gibor

Lecture, three hours. Prerequisites: Biology 1A-B-C (or equivalent); and organic chemistry, with laboratory.

The chemical and physical principles which govern cellular and subcellular organization and function.

102. Methods in Cell Physiology. (3) II.

Mr. Gibor

Laboratory, six hours; discussion, two hours. Prerequisite: Biology 101 or consent of instructor.

Experiments, demonstrations and discussion on methods used in cell physiology.

103. Introduction to Developmental

Mechanisms (3) III.

Mr. Kohl

Lecture, three hours. Prerequisites: Biology 108A, Biology 101 or Botany 121, and Zoology 100.

An introduction to the study of mechanisms that control development.

103L. Laboratory in Developmental

Mechanisms. (1) III.

Mr. Kohl

(Given alternate years.)

Laboratory, three hours. Prerequisite: Biology 103 or taken concurrently.

Selected experiments on mechanisms that control development.

104A. General Microbiology. (3) I. The Staff

Lecture, three hours. Prerequisites: Biology 1A-B-C; Chemistry 8A-B and 6A-B, or 130A-B-C and 6A-B; and concurrent enrollment in Biology 104AL.

An introduction to the biological properties of microorganisms; the historical foundations of the field; a study of the major groups of microorganisms, with emphasis on the bacteria, their structure, cultivation and diversity.

104AL. Laboratory in Microbiology. (2) I. The Staff

Laboratory, six hours. Prerequisite: Concurrent enrollment in Biology 104A.

Experiments dealing with the isolation, cultivation, and enrichment of diverse microorganisms.

104B. General Microbiology. (3) II. The Staff

Lecture, three hours. Prerequisites: Biology 104A-AL, and concurrent enrollment in Biology 104BL.

Physiology and genetics of microorganisms.

104BL. Laboratory in Microbiology. (2) II. The Staff

Laboratory, six hours. Prerequisite: Concurrent enrollment in Biology 104B.

Experiments dealing with the physiology and genetics of microorganisms.

105. Biology, Neurobiology I. (4) II. Mr. Case and Mr. Fisher

Lecture, three hours. Discussion, one hour.

Prerequisite: Biology 1A.

Properties of the nervous system ranging from single cells to the whole organism using examples from vertebrates and invertebrates studied in terms of morphology, physiology and behavior.

106. Biology, Neurobiology II. (4) III. Mr. Fisher and Mr. Case

Lecture, three hours. Discussion, one hour.

Prerequisites: Neurobiology I and permission of instructor.

A continuation of Neurobiology I.

106L. Biology, Laboratory in Neurobiology. (3) III. Mr. Case and Mr. Fisher

Laboratory, six hours.

Prerequisites: Neurobiology I and concurrent enrollment in Neurobiology II and permission of the instructor.

Histological, electrophysiological, and behavioral experiments designed to demonstrate basic principles of neurobiology.

107. Cytology and Cytogenetics. (3) II. Mr. Walters

Lecture, three hours. Prerequisites: Biology 1A-B-C, and concurrent enrollment in Biology 107L.

Fundamentals of cellular structure and function, with special emphasis on the chromosomes, cell division, and the interrelations of cytology with genetics and evolution.

107L. Laboratory in Cytology and Cytogenetics. (1) II. Mr. Walters

Laboratory, three hours. Prerequisite: Concurrent enrollment in Biology 107.

Cytological techniques; laboratory studies of cell division, chromosome behavior and chromosomal variation.

108A. General Biochemistry. (4) I. Mr. Cassman

Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 130A-B-C and 6A-B (or Chemistry 8A-B and 6A-B).

Chemistry of proteins; enzymic catalysis; bioenergetics; metabolism of carbohydrates.

108B. General Biochemistry. (4) II. Mr. Nakada

Lecture, three hours; discussion, one hour. Prerequisite: Biology 108A.

Metabolism of biologically important compounds; metabolic control mechanisms.

108C. General Biochemistry. (4) III. The Staff

Lecture, three hours; discussion, one hour. Prerequisite: Biology 108A-B.

Chemistry and metabolism of nucleic acids; biosynthesis of proteins; biochemical genetics.

109L. Laboratory in Biochemistry. (3) II, III. The Staff

Laboratory, six hours. Prerequisites: Biology 108A-B. (Biology 109L may be taken concurrently with Biology 108B).

Laboratory techniques in biochemistry.

114. Human Biochemical Genetics. (3) II. Mr. King

Lecture, three hours. Prerequisites: Biology 130A-B-C or Biology 133, Chemistry 8A-B or 130A-B-C or consent of instructor.

Biochemical variation in man. Inheritance of protein polymorphisms; inborn errors of metabolism; methods of study; ethnic groups and gene frequencies; prospects for treatment of genetic diseases. Chromosomal variation in man.

118. Principles of Biochemistry. (4) II. Mr. Taborsky

Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 1A-B-C, Chemistry 8A-B and 6A-B or consent of the instructor.

An introduction to molecular structures and mechanisms of living systems. Not for majors in Biochemistry-Molecular Biology or Cellular and Organismal Biology.

123. Cybernetic Processes in Human Ecology. (4) II. Mr. Hardin

Lecture, two hours; discussion, two hours. Prerequisite: Biology 1A or 20 or Botany 20 or Environmental Studies 2 or Environmental Studies 6 or consent of instructor. This course is the same as Environmental Studies 123.

Population and related pollution, resources, and conservation problems are analyzed in the light of cybernetics and systems analysis. An inquiry into why such problems are "controversial," and into the origins of psychological denial.

124. Competitive Processes in Human Ecology (4) III. Mr. Hardin

Lecture, two hours; discussion, two hours. Prerequisites: Biology 123 and consent of instructor.

The theory of human competition in various aspects: natural selection of genes, social selection, and conscious selection policy (eugenics); tribalism (including racism), and the biological effects of various forms of warfare.

127. Principles of Immunology. (3) I.**Mr. Cushing**

Lecture, three hours. Prerequisites: Organic Chemistry, including laboratory (may be taken concurrently; and a year's course in the biological sciences or equivalent, and concurrent enrollment in Biology 127L.

The principles of immunology are treated as basic biological phenomena. Relationships to medicine, biochemistry, genetics, embryology, and evolution.

127L. Laboratory in Immunology. (1) I.**Mr. Cushing**

Laboratory, three hours. Prerequisite: Concurrent enrollment in Biology 127.

Laboratory studies in immunology.

130A. General Genetics. (4) I, II.**Mr. Orias and Kung**

Lecture, three hours; discussion, one hour. Prerequisite: Biology 1A-B-C.

An introduction to the mechanisms which govern the transmission and translation of the hereditary information, as derived from studies of man, other animals, plants and microorganisms.

130B. General Genetics. (2) II, III.**Mr. Orias and Kung**

Lecture two hours. Prerequisite: Biology 130A.

An introduction to the mechanisms which govern the transmission and translation of the hereditary information, as derived from studies of man, other animals, plants and microorganisms.

130C. Population Genetics. (4) III. Mr. King

Lecture, three hours. Discussion, one hour. Prerequisites: Biology 130A and 130B, or equivalent.

The consequences of Mendelian principles in diploid populations, including quantitative genetics, genetic correlations, gene frequency, changes under selection, the effects of mutation on populations, gene interactions in fitness, and ecological genetics.

130L. Genetics Laboratory. (2) III.**Mr. Kung, Mr. Orias and Staff**

Laboratory, six hours. Prerequisite: Biology 130A or consent of instructor.

An introduction to the experimental analysis of the mechanisms of heredity.

131. Evolution. (3) II.**Mr. Cushing**

Lecture, three hours. Prerequisite: Biology 130A-B.

Organic evolution, with critical discussion of possible mechanisms involved.

133. Principles of Human Genetics.**(3) II.****Mr. King**

Lecture, three hours. Prerequisites: Biology 20 or equivalent and consent of instructor.

Basic processes of heredity in man and their application to such matters as the heredity-environment problem, population genetics, heredity counselling, medico-legal problems, selection and evolution.

136A-B. Biometry. (3-3) II, III. Mr. Oaten

Lecture, three hours. Prerequisites: Mathematics 3A-B-C, 30A-32-33, or 34A-B, or consent of instructor, and concurrent enrollment in Biology 136AL-BL.

Statistical methods in biology. Includes descriptive

statistics, frequency distributions, statistical inference, analysis of variance, correlation, regression, and non-parametric methods. Special emphasis is placed on their interpretation, correct application and efficient computation.

136AL-BL. Laboratory in Biometry. (1-1)**II, III.****Mr. Oaten**

Laboratory, four hours. Prerequisite: Concurrent enrollment in Biology 136A-B.

Practical instruction in solving problems and using calculators.

137. Cell Structure and Function. (3) I.**Mr. Cronshaw**

Lecture, three hours. Prerequisite: Biology 1A-B-C.

Advanced studies of cellular ultrastructure, nucleocytoplasmic interactions and differentiation.

139. Structure and Function of Subcellular**Components. (3) II.****Mr. Cronshaw**

Lecture, three hours. Prerequisite: Biology 137.

Advanced studies of the structure and function of subcellular components.

140. Mammalian Cells in Culture (3) III.**Mr. Englesberg**

Lecture, three hours. Prerequisites: Biology 104A, 104B, 130A, 130B and two quarters of biochemistry.

Behavior of cells in culture (growth, nutrition, metabolism, establishment of cell lines); genetics (isolation of mutants, cell fusion, linkage, and karyotype analysis; regulation of enzyme synthesis and activity; viral transformation; malignancy.

145A. Physics and Chemistry of Aquatic**Environments. (3) I. Mr. R. W. Holmes**

Lecture, two hours. Prerequisites: Upper division standing and permission of the instructor.

A discussion of the physical and chemical characteristics of biological significance in fresh water and marine environments.

145AL. Chemical and Physical Methods of Aquatic Environments. (2) I.**Mr. R. W. Holmes**

Laboratory, three hours; field trip, three hours. Prerequisites: Biology 145A (Must be taken concurrently) and consent of instructor.

A survey of physical and chemical methods used by limnologists and oceanographers, supplemented with field observations.

145B. Biology of Aquatic Systems. (3) II.**Mr. R. W. Holmes**

Lecture, two hours. Prerequisites: Biology 145A and permission of the instructor.

Morphology, systematics, life cycles and general ecology of fresh water and marine organisms, with emphasis on aquatic plant plankton.

145BL. Methods of Aquatic Biology. (2) II.**Mr. R. W. Holmes**

Laboratory, three hours; field trip, three hours. Prerequisites: Biology 145AL and Biology 145B (Must be taken concurrently with Biology 145B) and permission of the instructor.

Laboratory and field experience in the observation, identification, and quantitative enumeration of aquatic organisms.

145CL. Laboratory in Aquatic Biology.

(2) III.

Mr. R. W. Holmes and Mr. R. Howmiller
Laboratory, 6 hours. Prerequisites: Biology 145A, 145AL, 145B, 145BL and permission of instructors. Laboratory and field projects in Aquatic Biology.

155. Biology, Conservation of Aquatic

Resources. (3) III. Mr. Howmiller

Lecture, two hours; discussion, 1 hour.

Prerequisites: Environmental Studies 1, 2, 5 and 6 or introductory courses in Chemistry and Biology.

Biological, chemical and physical characteristics of lakes, streams, and estuaries. Succession and dynamics of population in aquatic environment. Emphasis will be placed on man's interaction with aquatic system; pollution, eutrophication, fisheries management. This course is the same as Environmental Studies 155 and will be doubly listed by Biological Sciences and Environmental Studies. Not open to students who have taken Biology 145B.

160. Plant Development. (2) III.

Mrs. B. Sweeney

Lecture, two hours. Prerequisites: Biology 1A-B-C and Chemistry 130A-B-C.

The development of plants guided by their physiological responses to light and gravity, the interaction of hormones, and other factors.

160L. Laboratory in Plant Development.

(2) III.

Mrs. B. Sweeney

Laboratory, six hours.

Techniques for the study of developmental processes in higher plants.

173. Introduction to Mycology. (4) I.

Mr. Ross

Lecture, three hours; lab three hours. Prerequisites: Biology 1A-B-C.

An introduction to the structure and function of fungi with emphasis on their development and associations with other organisms, including man.

174. Methods in Experimental Mycology.

(3) II.

Mr. Ross

(To be given alternate years.)

Laboratory, six hours; discussion, one hour. Prerequisites: Biology 173 or consent of the instructor.

Techniques and experimentation on fungal growth, development and differentiation.

175. Fungal Development. (2) III. Mr. Ross

(To be given alternate years—Spring 1973.)

Lecture, two hours. Prerequisite: Biology 173.

The development of fungi as a function of their response to interactions between the genome and intercellular and environmental stimuli.

194. Group Studies for advanced students.

(1) I, II, III.

The Staff

Oral reports by students; one seminar period. Prerequisite: Consent of the instructor. (May be repeated for a maximum of four units). Enrollment normally limited to 12 or fewer students.

A. Biochemistry-Molecular Biology: Mr. Cassman (I), Mr. Taborsky (II).

B. Biochemistry-Molecular Biology: The Staff (III).

C. Systematics: Mr. Smith (I).

D. Plant Ecology: Mr. Wales and Mr. C. H. Muller (I, II, III).

E. Embryology: Mr. Kohl and Mr. Triplett (I, II, III).

F. General Physiology: Mr. Laris

H. Immunology: Mr. Cushing (III).

I. Phycology: Mr. Neushul (I, II, III).

J. Literature in Vertebrate Biology: Mr. Rothstein

K. Biometry: Mr. Oaten (II, III)

M. Comparative Physiology: Mrs. DeWolfe and Mr. Chaffee (II).

N. Plant Physiology: Mr. W. Muller (I, II, III).

Q. Aquatic Biology: Mr. Howmiller and Mr. R. Holmes (I, II, III).

R. Neurophysiology: Mr. Case (I, III).

S. Protist Physiology: Miss Sweeney. (II).

T. Parasitology: Mr. Noble (I, II, III).

U. Plant Geography. (II).

V. Mycology: Mr. Ross (III).

W. Arthropod Biology: Mr. Wenner (I, II, III)

X. Cell Biology: Mr. Cronshaw (I, II).

Y. Plant Morphology: Mr. Neushul and Mr. Moseley (II).

Z. Group Studies in Ecological Physiology: Mr. Childress (I).

195A-B. Development of Biological Ideas.

(2-2) II, III.

Mr. Hardin

Discussion, two hours. Prerequisites: Upper division standing in the department and consent of the instructor.

Reading of biographies and classical original papers in biology, followed by individual reports and class discussion.

198. Readings in Biological Sciences.

(1-5) I, II, III.

The Staff

Individual conferences one hour every two weeks. Prerequisites: Senior standing with a major in biological sciences and consent of the instructor. 198 courses are limited to no more than 5 units each.

Special readings designed to broaden the outlook of students and to knit into a cohesive whole the basic principles underlying the major disciplines in the field.

199. Independent Studies in the Biological

Sciences. (1-5) I, II, III.

The Staff

Hours and credit by arrangement with any member of the staff. Laboratory or field. Prerequisites: Senior standing with a major in biological sciences and consent of the instructor. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses

201. Neurophysiology. (3) III. Mr. Case

Lecture, three hours. Prerequisite: A course in cellular or animal physiology.

The properties of nerve, neural systems and sense organs as illustrated with invertebrate material.

201L. Laboratory in Neurophysiology.

(2) III.

Mr. Case

Laboratory, six hours. Prerequisite: Consent of the instructor.

Laboratory projects illustrating the neurophysiology of invertebrates.

202. Biochemical Embryology. (2) I.

Mr. Kohl

Lecture, two hours. Prerequisites: Biology 103; and consent of instructor.

Recent advances in the biochemistry of animal development and cell differentiation.

203. Models of Developing Cell Systems.

(2) III.

Mr. Triplett

Lecture, two hours. Prerequisites: Biology 103 and consent of instructor.

A mathematical treatment of development phenomenon. Models of cellular differentiation and cellular associations.

203L. Laboratory on Models of Developing Cell Systems. (1) III.

Mr. Triplett

Laboratory, three hours. Prerequisite: Concurrent enrollment in Biology 203.

Computer methods of dealing with models of developing cell systems. Practice in the use of analog and digital computers in studies on development.

206. Membrane Transport. (2) I.

Mr. Laris

Lecture, two hours. Prerequisites: Zoology 101, and Biochemistry 108A, or consent of instructor.

A review of the mechanisms of transport across biological membranes.

207. Genes, Enzymes and Control

Mechanisms. (3) I.

Mr. Englesberg

Lecture, three hours. Prerequisites: Biology 104A-B, 108A-B-C, 130A-B, or consent of the instructor.

A study of gene structure, function and expression.

208. Enzymology. (3) I.

The Staff

Lecture, three hours. Prerequisite: Consent of the instructor.

General properties of enzymes—including the mechanism of action, kinetics, energetics and properties of enzymes, coenzymes and multienzyme systems.

208L. Enzymology Laboratory. (2) III.

The Staff

Laboratory, six hours. Prerequisite: Biology 208 or consent of instructor.

Selected experiments to illustrate the modern techniques of enzyme isolation, purifications and characterizations.

209L. Advanced Laboratory in Biochemistry.

(2) III.

The Staff

Laboratory, six hours. Prerequisite: Consent of the instructor. Advanced experiments in biochemistry.

210. Cell Heredity. (3) III.

Mr. Orias

(Given alternate years.)

Lecture, three hours. Prerequisites: Biology 130A-B and one quarter of Biochemistry, or consent of the instructor.

The cellular and molecular mechanisms underlying the transmission and regulated expression of genetic determinants, with emphasis upon studies of microorganisms.

211. Ciliate Biology. (3) I.

Mr. Kung,

Mr. Orias

Lecture, two hours; seminar, one hour. Prerequisites: consent of instructor.

Conceptual bases for the experimental use of Ciliates as models of eucaryotic cells in current frontiers of Biology: nuclear differentiation, membrane bioelectrics, cell morphogenesis and hormone action. An oral presentation of a paper in the recent literature will be required.

213. Biochemistry of the Nucleic Acids.

(3) III.

Mr. Carbon

Lecture, three hours. Prerequisites: Biology 108A-B and Organic Chemistry or consent of the instructor. (Chemistry 245 is recommended.)

Nucleic acid structure and function, chemistry of nucleotides and polynucleotides, sequencing methods, biosynthesis, polymerases, and nucleases.

214. Structure and Function of Proteins.

(3) III.

Mr. Taborsky

Lecture, three hours. Prerequisite: Consent of the instructor.

Aspects of the structure of proteins and protein-prosthetic group systems; interactive effects; mechanisms of action.

215. Comparative Biochemistry. (3) III.

Mr. Nakada

Lecture, three hours. Prerequisite: Consent of the instructor.

A study of biochemical diversities within the framework of biochemical unities of life.

218. Advanced Immunology. (2) III.

Mr. Cushing, Mr. Triplett

Lecture, two hours. Prerequisite: A course in elementary genetics and immunology or consent of the instructor.

Advanced consideration of selected topics in immunology.

220. Experimental Cytology and Electron

Microscopy. (2) III.

Mr. Cronshaw

Lecture, two hours. Prerequisites: Biology 108A-B-C or consent of instructor, and concurrent enrollment in Biology 220L.

An introduction to the techniques of structural cytology.

220L. Laboratory in Experimental Cytology and Electron Microscopy. (3) III.

Mr. Cronshaw

Laboratory, nine hours. Prerequisite: Concurrent enrollment in Biology 220.

Use of the electron microscope and preparation techniques for electron microscopy.

232. Molecular Evolution. (3) I.

Mr. King

Lecture, two hours. Prerequisite: Consent of instructor.

Taught fall quarter of odd-numbered years only.

The analysis and interpretation of evolutionary divergence of proteins and nucleic acids. The discussion will focus on calculation of rates of molecular change, the patterns and processes involved, the construction of phylogenetic trees, and some of the basic laboratory procedures.

234. Physiology of Algae. (2) I.

Mrs. B. Sweeney

Lecture, two hours. Prerequisites: Organic Chemistry.

Physiology of the responses of marine and freshwater algae to light, temperature and the chemical composition of their environment.

234L. Laboratory in Physiology of Algae.

(2) I. Mrs. B. Sweeney

Laboratory, six hours.

Techniques for the study of algal physiology.

236. Function and Behavior of Coenocytic**Fungi. (2) II. Mr. Ross**

Lecture, two hours. Prerequisite: Biology 173 or consent of the instructor.

Aspects of the genetic (heterocaryotic and parasexual) and epigenetic regulation of interactions within and among the multi-nucleate, acellular fungi.

245. Advanced Population Biology. (3) I.

Mr. Murdoch

Lecture, three hours. Prerequisites: An ecology course and permission of instructor.

A course dealing in depth with a few selected aspects of population and community dynamics of organisms. Extensive reading of original papers.

247A. Mathematical Biology. (3) I. Mr. Oaten

(Given alternate years.)

Lecture, three hours. Prerequisites: consent of instructor.

Mathematical methods in biology, with particular emphasis on the use of matrices and vector spaces and with applications mainly in population biology, including demography, prey-predator system, Markov processes, regression and analysis of variance.

247B. Mathematical Biology. (3) II. Mr. Oaten

(Given alternate years.)

Lecture, three hours. Prerequisites: consent of instructor.

Mathematical methods in biology, with particular emphasis on the use of matrices and vector spaces and with applications mainly in population biology, including demography, prey-predator system, Markov processes, regression and analysis of variance.

248. Introduction to Mathematical Modeling, Experimental Design and Computer Methods in Population Biology. (4) III.

Mr. Sharrock

Lecture, three hours. Prerequisites: Elementary calculus; elementary statistics.

Generalized view of hypothesis generation and testing, illustrated with qualitative and quantitative theoretical models from ecology, taxonomy and statistics. Principles of experimental design and data analysis will be discussed. Necessary computer skills will be taught.

250. Marine Phytoplankton. (2) I.

Mr. R. Holmes

Lecture, two hours. Prerequisites: Courses in Oceanography and Marine Plankton; or consent of the instructor; and concurrent enrollment in Biology 250L.

A laboratory course designed to acquaint the student with the problems and methods of cultivation of marine planktonic protists.

250L. Laboratory in Marine Phytoplankton.

(1) I. Mr. R. Holmes

Laboratory, three hours. Prerequisite: Concurrent enrollment in Biology 250.

Field studies in phytoplankton ecology and biological oceanography.

251. Cultivation of Marine Planktonic**Protists. (1) I. Mr. R. Holmes**

Lecture, one hour. Prerequisites: Consent of instructor and concurrent enrollment in Biology 251L.

A laboratory course designed to acquaint the student with the problems and methods of cultivation of marine planktonic protists.

251L. Laboratory in Cultivation of Marine**Planktonic Protists. (2) I. Mr. R. Holmes**

Laboratory, six hours. Prerequisite: Concurrent enrollment in Biology 251.

A discussion of techniques used in the cultivation of marine planktonic protists.

255A. Methods in the Characterization of**Biological Macromolecules. (Joint listing with the Department of Chemistry)**

(3) I. Mr. Cassman, Mr. Hooker, Mrs. Lee

Lecture, two hours; discussion, one hour. Prerequisite: Biochemistry, Calculus, Physical Chemistry or the consent of the instructors.

Introduction to biophysical chemistry. Macromolecular structure and conformation, intermolecular interactions, and multiple equilibria.

255B. Methods in the Characterization of**Biological Macromolecules. (Joint Listing with the Department of Chemistry)**

(3) II. Mr. Cassman, Mr. Hooker, Mrs. Lee

Lecture, two hours; discussion, one hour. Prerequisite: Biology 255A.

Theory and practice of physical methods employed to study macromolecules. Spectroscopic techniques, including ORD, CD, UV, fluorescence and phosphorescence, NMR, ESR, EM, and X-ray diffraction.

255C. Methods in the Characterization of**Biological Macromolecules. (Joint listing with the Department of Chemistry)**

(3) III. Mr. Cassman, Mr. Hooker, Mrs. Lee

Lecture, two hours; discussion, one hour. Prerequisite: Biology 255A-B or the consent of the instructors.

Theory and practice of physical methods employed to study macromolecules. Hydrodynamic properties, including sedimentation diffusion, viscosity, osmotic pressure.

262. Literature in Molecular Biology. (1)

I, II, III. Mr. Orias

Discussion, one hour. Prerequisites: At least one year of graduate work, and consent of the instructor.

Critical reading and presentation of the current literature in molecular biology by staff, postdoctoral fellows and graduate students.

264. Literature in Nucleic Acids. (1) I, II, III.

Mr. Carbon, Mr. Orias

Discussion, one hour. Prerequisite: Consent of instructor.

Critical reading and presentation of the recent literature on nucleic acids by staff, postdoctoral fellows and graduate students.

266. Literature in Developmental**Neurobiology. (1) III. Mr. Fisher**

Lecture, one hour. Prerequisite: Consent of instructor.

Critical reading and presentation of the literature on development of the nervous system, with emphasis on structural and biochemical changes, neuronal specification, and the development of behavior.

268. Literature in Population and Ecological Genetics. (3) I. Mr. King

Lecture, one hour; Seminar, one hour; Discussion, one hour. Prerequisite: Population Genetics.

Taught fall quarter of even-numbered years only.

A survey of current and recent literature on the genetics of natural populations and theoretical population genetics. Gene flow, genetic adaptation to diverse habitats, and patterns of polymorphism. Each student presents and conducts a discussion. May be repeated for credit.

595A-Z. Group Studies. (1) I, II, III.**The Staff**

Seminar, one to two hours. Prerequisite: Consent of the instructor. (May be repeated for a maximum of six units.)

A critical review of research in selected fields of biology. Subject matter for these seminars will be selected from the following list:

A. Biochemistry-Molecular Biology:

B. Biochemistry-Molecular Biology: Dr. J. A. Carbon (AC); Dr. M. Cassman (MC); Dr. E. Englesberg (EE); Dr. D. M. Kohl (DK); Dr. Ching Kung (CK); Dr. N. Lee (NL); Dr. H. I. Nakada (HN); Dr. E. Oria (EO); Dr. G. Taborsky (GT); Dr. E. L. Triplett (ET).

C. Systematics: Dr. J. R. Haller (JH); Dr. D. M. Smith (DS).

D. Plant Ecology: Dr. C. H. Muller (CM); Dr. B. A. Wales (BW).

E. Embryology: Dr. D. M. Kohl (DK); Dr. E. L. Triplett (ET).

F. General Physiology: Dr. P. C. Laris (PL); Dr. A. Gibor (AG).

H. Immunology: Dr. J. E. Cushing (EC); Dr. E. L. Triplett (ET).

I. Phycology: Dr. M. Neushul (MN).

J. Literature in Vertebrate Biology: Dr. S. I. Rothstein (SIR).

K. Biometry: Dr. A. Oaten (AO).

M. Comparative Physiology: Dr. B. B. DeWolfe (BD); Dr. R. J. Chaffee (RC). II.

N. Plant Physiology: Dr. W. H. Muller (WHM).

O. Invertebrate Behavior: Dr. D. Davenport (DD).

P. Advanced Population Ecology: Dr. J. H. Connell (HC); Dr. W. W. Murdoch (WM); Dr. J. L. King (JK); Dr. A. Oaten (AO).

Q. Aquatic Biology: R. Howmiller (RH); Dr. R. W. Holmes (RH).

R. Neurophysiology: Dr. J. F. Case (FC).

S. Protist Physiology: Dr. B. Sweeney (BMS)

T. Parasitology: Dr. E. R. Noble (EN).

U. Plant Geography: Dr. J. R. Haller (JH).

V. Mycology: Dr. I. K. Ross (IR).

W. Arthropod Biology: Dr. A. Wenner (AW).

X. Cell Biology: Dr. J. Cronshaw (JC). I, II.

Y. Plant Morphology: Dr. M. Neushul (MN); Dr. M. F. Moseley (MM).

Z. Group Studies in Ecological Physiology: Dr. J. J. Childress (CC).

596. Directed Reading and Research.**(2-12) I, II, III.****The Staff**

Prerequisites: Graduate standing and consent of instructor. May be repeated for credit up to half of the units required for the M.A. degree.

597. Individual Study for Master's**Comprehensive Examinations and Ph.D. Examinations. (1-12) I, II, III. The Staff**

Prerequisites: Graduate standing and consent of instructor. No unit credit allowed toward advance degree.

Enrollment limited to 24 units per examination. Maximum of 12 units per quarter.

598. Master's Thesis Research and**Preparation. (1-6) I, II, III. The Staff**

Prerequisites: M.A. (Thesis) candidate and consent of committee chairman. For research underlying the thesis and writing of the thesis. Maximum of 12 units total. No unit credit allowed toward degree.

599. Ph.D. Dissertation Preparation.**(1-12) I, II, III.****The Staff**

Prerequisites: Ph.D. candidate and consent of instructor. May be repeated for credit up to 12 units total. For writing of the dissertation.

BOTANY**Lower Division Courses****20. General Botany. (5) I, II, III.****Mr. W. H. Muller**

Lecture, four hours; laboratory, three hours.

Unifying principles of biology utilizing plants as exemplary material; correlation of structure and function; genetics, selection, and evolution; energy transformation; growth of populations and the relation of plants to man; conservation.

Not open to credit toward graduation to students who have completed Biology 20 or Biology 20Z, or Natural Sciences 1C.

Upper Division Courses**103A. Vegetation and Flora of California.****(4) II.****Mr. Haller**

Lecture, two hours; laboratory and field, six hours. Prerequisite: Introductory course in Botany or Biology, or Environmental Studies 2.

Primarily for students majoring in Botany, Biology or related fields. An introduction to the important plant species, families and communities of California and western North America, by means of extensive field observations, plant collection, the use of manuals, and the application of taxonomic and ecological principles.

Both 103A and 103B must be taken to receive credit.

103B. Vegetation and Flora of California.**(4) III.****Mr. Haller**

Lecture, two hours; laboratory and field, six hours. Prerequisite: An introductory course in Botany or Biology, or Environmental Studies 2.

Primarily for students majoring in Botany, Biology or related fields. An introduction to the important plant species, families and communities of California

and western North America, by means of extensive field observations, plant collection, the use of manuals, and the application of taxonomic and ecological principles.

Both 103A and 103B must be taken to receive credit.

110. Morphology of Bryophytes and Lower

Vascular Plants. (4) II. Mr. Moseley
(Given alternate years.)

Lecture, two hours; laboratory, six hours. Prerequisite: Biology 1A-B-C, or consent of the instructor.

Study of the structure, life-cycles, anatomy, and relationships of Bryophytes and lower fossil and living vascular plants; conquest of the land.

111. Morphology of the Higher Vascular Plants. (5) II.

Mr. Moseley

(Not given 1973-74.)

Lecture, three hours; laboratory, six hours. Prerequisite: Biology 1A-B-C, or consent of the instructor.

Study of the structure, life-cycles, anatomy, and relationships of the fossil and living higher vascular plants; evolution of ovule, angiospermy, and the flower.

113. Plant Anatomy. (3) I.

Mr. Moseley

Lecture, three hours. Prerequisites: Biology 1A-B-C or consent of instructor, and concurrent enrollment in Botany 113L.

An introduction to the anatomy of vascular plants. Fundamental descriptive, developmental, and comparative aspects of anatomy.

113L. Laboratory in Plant Anatomy. (2) I.

Mr. Moseley

Laboratory, six hours. Prerequisites: Concurrent enrollment in Botany 113, and consent of instructor.

Laboratory examination of the anatomy of vascular plants.

114. Ecological Plant Anatomy. (3) III.

Mr. Moseley

Lecture, two hours; laboratory, three hours. Prerequisite: Botany 113.

The anatomical adaptations of vascular plants to environmental factors, principally to soil, water, light, and biotic factors.

120. Introductory Plant Physiology. (3) III.

Mr. W. H. Muller

Lecture, three hours. Prerequisites: Biology 1A-B-C; organic chemistry, and concurrent enrollment in Botany 120L; and consent of instructor.

Functions of higher plants; photosynthesis, assimilation, water relations, and growth regulators.

120L. Laboratory in Introductory Plant

Physiology. (2) III. Mr. W. H. Muller

Laboratory, six hours. Prerequisites: Consent of instructor, and concurrent enrollment in Botany 120.

Laboratory experiments in plant physiology.

121. Plant Metabolism. (4) II.

The Staff

Lecture, four hours. Prerequisites: Biology 1A, and an organic chemistry course with laboratory.

Metabolic pathways, trapping and utilization of energy, chemical and physical regulatory systems.

123. Plant Physiology in Relation to Soil

Factors. (2) II. Mr. W. H. Muller

Lecture, two hours. Prerequisites: Biology 1A and 1C or consent of the instructor.

Development and characteristics of soils. Physiology of higher plants as affected by water, minerals, and other variables in the soil.

140. General Plant Ecology. (3) I.

Mr. Wales, Mr. C. H. Muller

Lecture, two hours; laboratory or field, four hours. Prerequisites: Biology 1A-B-C and consent of instructor. Botany 103AB is recommended.

An introduction to the principles of plant ecology including analysis of the environment, plant interactions, and community dynamics.

141. Physical Plant Ecology. (3) II.

Mr. Wales

Lecture, two hours; laboratory or field, three hours. Prerequisites: Biology 1A-B-C and consent of instructor. Botany 140 is recommended.

The ecology of individuals, species, and communities of plants, with emphasis on habitat measurement and plant responses.

142. Ecology of Biotic Communities. (4) III.

Mr. C. H. Muller

Lecture, two hours; laboratory, six hours. Prerequisites: Background in Field Botany and consent of the instructor.

The theories of community origin, structure, and function and the environmental basis of community distribution.

146. Plant Geography. (4) I.

Mr. Haller

Lecture, four hours. Prerequisites: Biology 1A or Biology 20 or Botany 20, and Botany 103A-B. Recommended: Geography 3 or Botany 140.

The distribution of communities, floristic groups and individual species of vascular plants as determined by environment, migration and evolution.

151. Taxonomy of Vascular Plants. (2) I.

Mr. Smith

Lecture, two hours. Prerequisites: Biology 1A-B-C, Botany 103A-B, or consent of instructor, and concurrent enrollment in Botany 151L.

A systematic study of the characteristics and relationships of vascular plant families; the history, principles and methods of plant classification.

151L. Laboratory in the Taxonomy of

Vascular Plants. (2) I. Mr. Smith

Laboratory, six hours. Prerequisite: Concurrent enrollment in Botany 151.

Laboratory examination of the families of vascular plants.

170. Phycology. (2) I.

Mr. Neushul

Lecture, two hours. Prerequisites: Biology 1A-B-C, and concurrent enrollment in Botany 170L.

An introduction to the algae, with emphasis on comparative morphology, evolution and classification. Attention is also given to environmental factors that influence marine and freshwater algal habitats.

170L. Laboratory in Phycology. (2) I.

Mr. Neushul

Laboratory, six hours. Prerequisite: Concurrent enrollment in Botany 170.

A study of marine and fresh water algae in the laboratory and in the field.

171. Advanced Phycology. (2) II.

Mr. Neushul

Lecture, two hours. Prerequisites: Botany 170-170L, or consent of instructor, and concurrent enrollment in Botany 171L.

Development, differentiation and morphogenesis of algae. Emphasis is placed in the laboratory on the experimental manipulation of living plants. Algal cells are studied using both light and electron microscopes.

171L. Laboratory in Developmental**Phycology. (2) II.**

Mr. Neushul

Laboratory, six hours. Prerequisites: Concurrent enrollment in Botany 171, and consent of instructor.

Methods of developmental phycology; emphasis is placed on the experimental manipulation of living plant materials.

Graduate Courses**240. Environmental Measurement. (2) I.**

Mr. Wales, Mr. R. Holmes

Not given 1973-74.

Lecture, one hour; laboratory, three hours. Prerequisites: Previous courses emphasizing field work and consent of the instructors.

Measurement of parameters comprising the environmental complex experienced by plants in aquatic and terrestrial habitats. (Limited to eighteen students).

242. Biotic Competition. (3) I.

Mr. C. H. Muller

Lecture, one hour; laboratory, six hours. Prerequisite: A course in Ecology and consent of the instructor.

The mechanisms of interspecific and intraspecific competition and related interactions.

243. Chemical Interactions Between Plants.

(3) II.

Mr. C. H. Muller

Lecture, one hour; laboratory and field, six hours. Prerequisite: Consent of instructor.

The role of metabolites and other chemical exudates in the ecology of plants.

252. Principles of Plant Systematics and**Evolution. (3) I.**

Mr. Smith

Lecture, three hours. Prerequisites: At least one course in both taxonomy and genetics and consent of the instructor.

Variation and evolution in higher plants and the relation of these phenomena to taxonomic practice.

253. Experimental Methods in Plant**Systematics. (3) II.**

Mr. Smith

Lecture, one hour; laboratory, six hours. Prerequisites: Botany 252 and consent of the instructor.

The application of laboratory procedures to studies of variation and evolution and the utilization of these data in plant systematics; consideration of race and species hybrids, cytotaxonomy, chemotaxonomy.

254. Field Studies of Variation in Natural**Populations. (3) III.**

Mr. Haller, Mr. Smith

Lecture, one hour; laboratory, six hours. Prerequisite: Consent of the instructors, Botany 252,

and one of the following: Botany 253, Biology 107. Recommended: a course in biometry.

Field studies of natural populations selected to illustrate the mechanisms of variation, evolution, and speciation.

261. Literature in Bioclimatology. (1) II.

Mr. Wales

(Given alternate years)

(Not given 1973-74)

Discussion, one hour. Prerequisite: Consent of the instructor.

Critical reading and presentation of recent literature in bioclimatology by staff and graduate students. Microclimates associated with vegetation are emphasized.

ZOOLOGY**Lower Division Courses****25. Human Anatomy. (3) I, II, III. The Staff**

Lecture, three hours. Prerequisite: Concurrent enrollment in Zoo 25L except for those for whom Zoo 25 is an elective course.

Recommended: Biology 20 or other course in biology.

The structure of the organ systems based on human material.

25L. Laboratory in Human Anatomy.

(2) I, II, III.

The Staff

Laboratory, eight hours. Prerequisite: Concurrent enrollment in Zoology 25.

Dissection of the cat.

40. Human Physiology. (4) I. Mr. Fisher

Lecture, four hours. Prerequisites: Biology 1A or 20; Chemistry 1A or 25, or Physics 6A or 10; and concurrent enrollment in Zoology 40L.

An introduction to human physiology, with emphasis on control mechanisms.

40L. Laboratory in Human Physiology.

(1) I.

Mr. Fisher

Laboratory, three hours. Prerequisite: Concurrent enrollment in Zoology 40.

An elementary course in experimental physiology, with emphasis on mammals.

Upper Division Courses**100. Developmental Biology. (3) II.**

Mr. Kohl, Mr. Triplett

Lecture, three hours. Prerequisites: Biology 1A-B-C and concurrent enrollment in Zoology 100L.

Descriptive embryology of vertebrates and an introduction to developmental mechanisms.

100L. Laboratory in Developmental Biology.

(2) II.

Mr. Kohl, Mr. Triplett

Laboratory, three hours; discussion, one hour. Prerequisite: Concurrent enrollment in Zoology 100.

Laboratory techniques in Developmental Biology.

101. Animal Cell Physiology. (4) III.

Mr. Laris

Lecture, three hours; discussion, one hour. Prerequisites: Biology 1A-B-C, Organic Chemistry, Physics recommended.

Structure and function in cells, with emphasis on membrane and bio-electrical phenomena, motion and bio-luminescence in animal cells.

101L. Laboratory in Animal Cell Physiology.

(2) III. Mr. Laris

Discussion, one hour; laboratory, three hours. Prerequisite: Concurrent enrollment in Zoology 101.

Experiments in transport, bioelectricity and motion.

105. Biology of Fishes. (2) II.

Mr. Ebeling

(Not given 1973-74)

Lecture, two hours. Prerequisites: Biology 1A-B-C and concurrent enrollment in Zoology 105AL.

An introduction to the study of fishes, emphasizing their structure and environmental responses.

105AL. Laboratory in the Biology of Fishes.

(2) II. Mr. Ebeling

(Not given 1973-74)

Laboratory, six hours. Prerequisite: Concurrent enrollment in Zoology 105.

Laboratory and field studies of fishes.

105BL. Problems in Ichthyology. (2) III.

Mr. Ebeling

Laboratory, six hours. Prerequisites: Zoology 105, 105AL, 161 or consent of instructor.

Original investigations of fishes: their systematics, ecology, design and function.

107. Comparative Vertebrate Anatomy.

(2) I. Mrs. DeWolfe

Lecture, two hours. Prerequisites: Biology 1A-B-C and concurrent enrollment in Zoology 107L.

The adult anatomy of vertebrates: its evolutionary and adaptive significance.

107L. Laboratory in Comparative**Vertebrate Anatomy. (2) I.**

Mrs. DeWolfe

Laboratory, six hours. Prerequisite: Concurrent enrollment in Zoology 107.

Dissection of selected vertebrate types. Comparative morphology of organ systems.

109. Comparative Vertebrate Physiology.

(3) I. Mr. W. N. Holmes

Lecture, three hours. Prerequisite: Zoology 107A-B.

A survey of the physiology of vertebrate organ systems with special emphasis on the control mechanisms.

109L. Laboratory in Comparative Vertebrate Physiology. (1) II.

The Staff

Laboratory, three hours. Prerequisite: Zoology 109.

Selected experiments on the physiology of vertebrate organ systems.

111. General Parasitology. (3) I, III.

Mr. Noble

Lecture, three hours. Prerequisites: Biology 1A-B-C and concurrent enrollment in Zoology 111L.

Biological aspects of parasitism: animal parasites of man and of other animals.

111L. Laboratory in Parasitology. (2) I, III.

Mr. Noble

Laboratory, six hours. Prerequisite: Concurrent enrollment in Zoology 111.

The study of parasites from living and preserved material.

112A. Invertebrate Zoology. (4) I. The Staff

Lecture, two hours; laboratory, six hours. Prerequisite: Biology 1A-B-C, or Biology 20 with consent of the instructor.

An introduction to the classification, structure, life histories and habits of the major phyla of invertebrate animals, with emphasis on the marine fauna of the Santa Barbara area.

112B. The Invertebrate as an Experimental**Animal. (3) II.**

Mr. Davenport

Lecture, three hours. Prerequisite: Zoology 112A, or its equivalent.

A consideration of the experimental advances that have been made with invertebrate animals in the control of development, organization, information transfer and behavior, with emphasis on the relation of these studies to the physiological ecology of groups.

112L. Problems in Invertebrate Zoology.

(3) III. Mr. Davenport

Discussion, 1 hour; laboratory, six hours. Prerequisite: Zoology 112B. Admission by consent of the instructor only.

The experimental approach to invertebrates. Individual and group problems in development, behavior and physiological ecology.

113A. Evolution and Behavioral Ecology of Terrestrial Vertebrates. (2) I.

Mr. Rothstein

Lecture, two years. Prerequisites: Biology 1ABC and concurrent enrollment in Zoology 113AL.

Evolutionary and ecological principles as demonstrated by mammals, birds and herptiles; systematics; and the mechanisms such as hibernation and migration by which vertebrates cope with their environment.

113AL. Laboratory in Vertebrate Biology.

(2) II. Mr. Rothstein

Laboratory, six hours. Prerequisite: Concurrent enrollment in Zoology 113A.

Classification, identification and observation of local vertebrates stressing birds and herptiles.

113B. Evolution and Behavioral Ecology of Terrestrial Vertebrates. (2) II.

Mr. Rothstein

Lecture, two hours. Prerequisites: Zoology 113A and concurrent enrollment in Zoology 113BL.

Principles of behavior as demonstrated by mammals, birds, and herptiles, and the manners in which behavior and ecology interact in determining the biology of vertebrates. A strong evolutionary approach will be emphasized.

113BL. Laboratory in Vertebrate Biology.

(2). II. Mr. Rothstein

Laboratory, six hours. Prerequisites: Zoology 113A, AL and concurrent enrollment in Zoology 113B.

Classification, identification and observation of local vertebrates stressing birds and mammals. Introduction to techniques used by vertebrate biologists.

113CL. Laboratory and Individual Research in Vertebrate Biology. (2) III.

Mr. Rothstein, Mrs. De Wolfe

Laboratory, six hours. Prerequisites: Zoology 113B, 113BL, and consent of instructor.

Field studies of the vertebrates of California, stressing species and communities, requiring extensive field trips; individual research projects conducted in the field and/or the laboratory.

115. Biology of Arthropods-Aquatic. (2) II.

Mr. Wenner

Lecture, two hours. Prerequisites: Biology 1A-B-C. Concurrent enrollment in 115L or 117AL required.

The natural history of aquatic and semi-aquatic arthropods in the local ponds, streams, sloughs, and ocean; with an emphasis on their distribution, abundance, identification, and environmental adaptations.

115L. Laboratory in the Biology of**Arthropods. (2) II.**

Mr. Wenner

Laboratory, six hours. Prerequisite: Enrollment in Zoology 115. Concurrent enrollment in Zoology 117AL recommended.

Laboratory and field study (local ponds, streams, sloughs, and ocean).

116. Biology of Arthropods-Terrestrial.**(2) III.**

Mr. Wenner

Lecture, two hours. Prerequisite: Biology 1A-B-C. Zoology 115 recommended. Concurrent enrollment in 116L or 117BL required.

The natural history of terrestrial arthropods (primarily insects) in the local area; with an emphasis on their distribution, abundance, identification, and environmental adaptations.

116L. Laboratory in the Biology of**Arthropods. (2) III.**

Mr. Wenner

Laboratory, six hours. Prerequisite: Enrollment in Zoology 116. Zoology 115L recommended. Concurrent enrollment in Zoology 117BL recommended.

Laboratory and field study (primarily insects).

117AL. Laboratory in Arthropod Diversity.**(1) II.**

Mr. Wenner

Laboratory, three hours. Prerequisite: Zoology 115.

Aquatic emphasis. Laboratory and field study.

117BL. Laboratory in Arthropod Diversity.**(1) III.**

Mr. Wenner

Laboratory, three hours. Prerequisite: Zoology 116.

Laboratory in insect diversity. Terrestrial emphasis.

128. Vertebrate Physiological Cycles. (2) III.

Mrs. DeWolfe

Lecture, two hours. Prerequisite: Zoology 109 or equivalent, passed or taken concurrently.

Analysis of seasonal changes in the endocrine and reproductive systems of native vertebrates. Physiological concomitants of the annual cycles, and environmental factors of dynamic importance.

140. Ecology. (3) I, III.

Mr. Connell, Mr. Murdoch, and Staff

Lecture, three hours. Prerequisites: Biology

1A-B-C; mathematics through introductory calculus or consent of instructor.

The biology of populations and communities of organisms. Introduction to population dynamics and the structure and function of ecological communities.

140AL-BL. Laboratory in Ecology.**(2-2) I, II.**

Mr. Connell, Mr. Murdoch, and Staff

Laboratory, six hours. Both quarters must be taken. Prerequisites: Zoology 140 or its equivalent (may be taken concurrently) and consent of the instructor.

Laboratory and field analyses of the biology of populations and communities.

Both 140AL and 140BL must be taken in order to receive credit.

142A-B. Comparative Physiology.**(2-2) I, II. Mr. Case and Mr. Childress**

(Not offered 1973-74)

Lecture, two hours. Prerequisites: Biology 1A-B-C and concurrent enrollment in Zoology 142AL-BL.

Analysis of physiological principles by the comparative method with emphasis on Neurobiology (A) and Homeostatic Mechanisms (B).

142AL-BL. Laboratory in Comparative**Physiology. (2-2) I, II.**

Mr. Case and Mr. Childress

(Not offered 1973-74)

Laboratory, six hours. Prerequisite: Concurrent enrollment in Zoology 142A-B.

Laboratory exercises in comparative physiology with emphasis on invertebrates.

143. Ecological Physiology. (3) I.

Mr. Childress

Lecture, three hours. Prerequisites: Biology 1ABC, Zoology 112A, and concurrent enrollment in Zoology 143L.

This course will consider the physiological responses and adaptations of animals to their environments. The underlying physiological and biochemical mechanisms will be emphasized. The approach will be comparative in nature and will emphasize aquatic animals.

143L. Laboratory in Ecological Physiology**(2) I.**

Mr. Childress

Laboratory, six hours. Prerequisite: Concurrent enrollment in Zoology 143.

Semi-independent study lab to accompany Zoology 143. The physiological responses and adaptations of animals to their environment will be studied. Aquatic animals will be emphasized.

155. General Endocrinology. (4) II.

Mr. W. N. Holmes

Lecture, three hours; Discussion, one hour. Prerequisite: Comparative Vertebrate Physiology (Zoology 109).

An introduction to the endocrine system in vertebrates and the nature of hormonal control mechanisms.

161. Systematics of Fishes. (2) I. Mr. Ebeling

(Not offered 1973-74)

Lecture, two hours. Prerequisites: Biology 1A-B-C and concurrent enrollment in Zoology 161L.

The systematics of fishes, emphasizing their evolution, classification, and distribution.

- 161L. Laboratory in the Systematics of Fishes. (2) I.** Mr. Ebeling
(Not given 1973-74)
Laboratory, six hours. Prerequisite: Concurrent enrollment in Zoology 161.
Laboratory studies in the systematics of fishes.

Graduate Courses

- 237. Animal Behavior as a Science. (4) I.** Mr. Wenner
Lecture, three hours; Discussion, one hour. Prerequisites: A course in invertebrate zoology and a university course in physiology.
A comparative study of the methodology used in

the study of behavior, including a treatment of perception, behavioral patterns, social organization, and an analysis of various forms of communication.

- 255. Comparative Endocrinology. (3) II.** Mr. W. N. Holmes
Lecture, two hours. Prerequisite: Zoology 109, or Zoology 142A or Biology 101. Qualified seniors may take the course with the consent of the instructor.
A detailed study of the hormonal regulatory mechanisms in vertebrates.

- 255L. Experimental Endocrinology. (2) III.** Mr. W. N. Holmes
Laboratory, six hours. Prerequisite: Zoology 255.
Techniques of experimental endocrinology.

BLACK STUDIES

- Kane C. Anyanwu, Ph.D., *Assistant Professor of Black Studies.*
C. Edward Crowther, LL.M., *Lecturer in Black Studies.*
Elinor Beason Evans, M.A., *Lecturer in Black Studies.*
John W. Hanson, B.A., *Associate in Black Studies.*
Ronald Jackson, M.A., M.Ed., *Associate in Black Studies.*
David Lawyer, M.A., *Lecturer in Black Studies and Political Science.*
Frank G. Muchenje, M.P.A., *Lecturer in Black Studies and Political Science.*
Gerard G. Pigeon, Ph.D., *Assistant Professor of Black Studies.*
James D. Smith, M.F.A., Ph.D., *Associate Professor of Art (Chairman of Department).*



THE DEGREE OF BACHELOR OF ARTS

The Department of Black Studies seeks to increase the general awareness and understanding of the Black experience through an examination of its contemporary and historical manifestations in various societies. To do this, it utilizes a cross-cultural approach and incorporates the active participation of faculty, students, and the wider community.

The major in Black Studies is designed to provide (1) a broad cross-cultural orientation focusing on the heritage and contemporary social situation of Black people (2) preparation for students planning careers either in teaching, community service, or in city and state agencies, and (3) instructions for students who intend to do graduate work in the area of ethnic-american studies or allied areas in the social sciences, humanities and arts.

PREPARATION FOR THE MAJOR

A total of 8 courses of lower division work is required in preparation for the major. All students must complete Black Studies 1A-B-C and 2 or approved equivalents. Four courses from departments below with no more than 2 courses from any one department. Anthropology (Anthro 2, 3 and 5 recommended); Economics (Econ 1, 2); Geography; History (Hist 4A-B-C, 17A-B recommended); Philosophy (1 or 5 recommended); Political Science (5, 10, and 45 recommended); Sociology (1 and 2 recommended). Courses taken from the above sequences in preparation for the Black Studies major may also, in certain instances, be used to fulfill the requirements of the general education program.

THE MAJOR

Required: 36 units of upper division Black Studies courses, twelve (12) of which may be taken in upper division work in closely related departments or fields. This should be worked out with the department adviser. Although a foreign language is not required, majors in Black Studies are encouraged to take at least three (3) quarters of a foreign language of their choice.

THE TEACHING CREDENTIAL

A major in Black Studies may serve as an appropriate part of the program of studies required for a teaching credential in the public schools of California. A student who has earned a total of 36 units in Black Studies may also apply for the teaching credential. Students wishing to enter the credential program should first consult the department credential adviser. (See detailed information on credentials in the Graduate School of Education Announcement.)

Lower Division Courses

1A. Introduction to the Cultures and Peoples of African Heritage: The United States of America. (4) The Staff

Part one of a three quarter sequence required as preparation for the major in Black Studies. Its specific focus is the United States and its objective is to acquaint the beginning student, mainly freshmen, with the historical and current social condition of Black people in North America.

1B. Introduction to the Cultures and Peoples of African Heritage: Latin America and the Caribbean. (4) Mr. Pigeon

Part two of a three quarter sequence required as preparation for the major in Black Studies. The history of Black peoples in Latin countries and in the Caribbean will be surveyed. Attention will be given to the differential adaptations made and the different levels of prosperity and influence achieved by Black people in this area of the world.

1C. Introduction to the Cultures and Peoples of African Heritage: The African Continent. (4) Mr. Anyanwu

Part three of a three quarter sequence required as preparation for the major in Black Studies. Selected areas of the African Continent will be the focus of detailed discussion and exploration. Particular attention will be given to those areas which were the sources of Black population in the "new world." Both the African past and contemporary Africa will be dealt with.

2. Group Exploration of Racism. (2) I, II, III. Mrs. Obradovic, Mr. Jackson

Group discussions designed to explore, identify and understand the social and emotional pathology of racist orientations as they appear in everyday life. Discussions will focus on examinations of personal experiences, and extensive personal involvement and participation are expected. Not restricted to majors in Black Studies. Limited enrollment.

38. The Afro-American Culture Experience Through Literature. (3) The Staff

A colloquium which examines themes and perspectives in Afro-American culture as embodied in various forms of original slave narratives. Limited enrollment.

48. Workshop: Writing and the Afro-American Experience. (4) The Staff

Prerequisite: Admission by consent of the instructor.

The workshop is designed to give young writers an opportunity to write poetry and fiction according to their own interests. Students are required to read

their work and subject it to critical appraiser, and to discuss craft, particularly as it operates within the Black American experience. (One hour for lecture and three hours for discussion.) Limited enrollment.

Upper Division Courses

100. The Social Institution of Communication. (4) Mr. Anyanwu

This course is designed to offer the student a basic conceptual framework for analyzing the role of communication and initiating goal-oriented action within the Afro-American community.

*101. Black Legislators and Elected Officials in North America. (4) III. The Staff

Prerequisite: Upper Division standing or consent of instructor.

This course is designed to acquaint the student with the peculiar problems of access to, and incumbency in, political office for the Black American. The distinctive vantage point of the Black legislator on major current social problems and issues will be critically examined and explored. Extensive use will be made of visiting legislators and elected officials. Both historical and comparative analysis will be emphasized.

102. Black Radicals and the Radical Tradition. (4) III. Mr. Muchenje

Prerequisite: Upper Division standing or consent of instructor.

This course will examine the tradition of radical thought and the relevance of this thought to the needs and interests of the Black community. Several hypotheses related to radical thought will be formulated and analyzed in light of current events. In addition the lives and works of individual Black Americans who fall in this tradition will be discussed.

104. Political Action in the Black Community. (4) II. The Staff

An examination of actions and reactions of Black elected officials (in California) to public issues having particular relevance to the black community and the techniques and procedures adopted by the elected officials in response to community demands on these issues.

105. An Introduction to African Nationalism. (4) Mr. Anyanwu

An introduction to African Nationalism through comparative study of African Cultures.

*110. Economic Theory, Practice and the Social Condition of the Black American. (4) The Staff

Prerequisite: Upper Division standing or consent of instructor.

* Not offered in 1973-74.

This course deals with national economic policy, the theory by which it is guided, and the manner in which this policy moulds the social condition of the Black American. Some attention will be given to the tradition in economic thought from which our national policy making derives.

115. African Philosophy. (4) I, III.

Mr. Anyanwu

Prerequisite: Upper Division standing or consent of instructor.

An examination of the philosophy of African peoples and its influence on religious, moral, and customary ideas and practices.

119. Advanced Group Exploration of

Racism. (4)

Mr. Jackson

Prerequisite: Upper Division standing or consent of instructor.

Like Black Studies 2, this course will explore the identity and understanding of the social and emotional pathology of racist orientations. However, the course will dwell more specifically on the problem and cause of racist pathology, both from an individual perspective and from an institutional perspective. Limited Enrollment.

120. Social Psychology of Racism.

(4) I, II, III.

Mr. Jackson

Prerequisite: Upper Division standing or consent of instructor.

This course will examine the effects of prejudice and discrimination on the victims of racism. The social sources of racist attitudes and practices of racial discrimination will be examined, as well as the effect of these attitudes and practices on personal growth and development. Relevant research studies will be used and a comparative emphasis taken in the course.

128. Oral Tradition of the Afro-American

Culture. (4) I, III.

Mr. Pigeon

This course is designed to acquaint the student with the oral traditions of Afro-American culture as expressed in Black idioms and folklore.

129. Myth and Symbolism in Afro-American Literature. (4)

Mrs. Evans

This course will explore the development of the mythic and symbolic imagination in some of the major works of Afro-American writers.

130A. French African Literature and

Literary Figures. (4)

Mr. Pigeon

Prerequisite: Upper Division standing or consent of instructor.

History of French African Literature with emphasis on its development in Africa and in the West Indies. The class will study the concept of negritude from its birth to the present. Among the writers whose work will be studied are: Birago Diop, Aime Cesaire, Frantz Fanon, Albert Memmi, Leopold Sedar Senghor. A reading knowledge of French will be helpful.

130B. French African Literature After The

Independence. (4)

Mr. Pigeon

Prerequisite: Upper Division standing or consent of instructor.

This class will acquaint the student with the new ideologies and tendencies which appear *After The Independence on the African Soil* and simultaneously

in the *French West Indies*. Among the writers whose works will be studied are: Mongo Beti, Olympe Bhely Guenun, Camara Laye, Aime Cesaire, Charles Nokan, Fredinand Oyono.

132. Seminar in Afro-American Literature. (4)

The Staff

A comparative analysis of the different creative visions in Afro-American Literature. Selected authors and their work will be read intensely and students will prepare imaginative manuscripts based on the techniques of those writers. Upper Division standing only.

133. Introduction To West Indian Literature.

(4)

Mr. Pigeon

Prerequisite: Upper Division standing or consent of instructor.

This course will deal with the works of West-Indian poets, novelists and literary essays of selected politicians. A chronological survey will be made of the writers of different islands. Among the writers whose works will be studied are: Edward Blyden, Marcus Garvey, Saint John Perse, Aime Cesaire, Leon Damas, Guy Tirolien, Paul Niger, Jacques Roumain, Edward R. Braithwaite, Jean F. Briers, R. Depestre.

134. Seminar on Aime Cesaire. (4) Mr. Pigeon

Prerequisite: Upper Division standing or consent of instructor.

This course will be an in-depth study of plays, novel, poetry, and political treatises of this renowned Martiniquais writer. The student will have to analyze and possibly act in plays like: *The Tragedy of King Christopher*, *A Season in the Congo*, *The Tempest*, the novel, *Return to My Native Land*, and the *Political Letter of Maurice Thorez*. Also, his speech on Colonialism will be analyzed.

140. Ethnomusicology. (4)

Mr. Hanson

Prerequisites: Upper Division standing or consent of instructor.

The development of music in non-European cultures will familiarize the student with the ethnic origins of music in the Caribbean; describe the historical development of this music, and analyze the aspects if it which derive from the African, Afro-American, and Latin American peoples. This course can satisfy 4 units of the general education requirement in Fine Arts.

*150. Black American Businessmen.

Professionals, and Administrators.

(4)

The Staff

Prerequisite: Upper Division standing or consent of instructor.

This course will examine the typical professional and administrative roles, and avenues of access to them, occupied by the Black American. Social trends that impede, facilitate, and condition Black participation in these areas will be discussed. Relevant research findings will be combined with visiting lecturers. Both historical and comparative analysis will be emphasized.

160A. Analyses of the Racist Experience.

(4) I.

Rt. Rev. Crowther

Using the Jewish, Black and minority group experiences, the course will seek to offer historical perspectives for a contemporary related analysis.

* Not offered in 1973-74.

160B. White Racism and the African**Continent. (4) II. Rt. Rev. Crowther**

A survey course examining the white man's self-image in Africa. The consequences of colonialism leading to the contemporary experience of white racism, especially in Southern Africa, will be reviewed. Special attention will be given to apartheid and the Portuguese territories.

160C. The African Liberation Movements.**(4) III. Rt. Rev. Crowther**

The African reaction to the experience of colonialism and apartheid. A survey of African revolutionary movements with special emphasis on contemporary issues. The course will emphasize the theoretical as well as the practical bases of African revolutionary movements.

195A. Community Involvement. (4)**Mr. Jackson**

Prerequisite: Admission by consent of the department.

This is a field study course designed to acquaint the student with correctional facilities, civic agencies and community organizations and their functions. Special emphasis will be devoted to the Black community and those organizations in the broader community that directly affect its welfare.

195B. Community Involvement. (4)**Mr. Jackson**

Prerequisite: Admission by consent of the department.

This field study course will provide students an opportunity for an in-depth exploration of community agencies and organizations. Students will be able to participate in authorized programs of several correctional facilities.

197. Field Research. (4) I, II, III. The Staff

Prerequisite: Upper Division standing or consent of instructor.

This course is designed to acquaint students with the actuality of selected aspects of the Black American experience. Selected areas of the local community will be the focus of research attention in the course. Relevant research of this experience will be required of each student. Open only to students who have completed lower division course requirements.

198. Senior Seminar. (4)**Mr. Jackson**

Prerequisite: Upper Division standing or consent of instructor.

Enrollment limited. Reading and discussion will be centered around a single topic or problem to be announced in advance by the instructor.

199. Independent Studies in Black Studies.**(1-5) I, II, III.****The Staff**

Prerequisite: Senior standing.

Admission by special permission of the department only. 199 courses are limited to not more than 5 units in one quarter and no more than 12 units total.

CHEMISTRY

Ernest L. Bickerdike, Ph.D., *Professor of Chemistry, Emeritus.*

Thomas C. Bruice, Ph.D., *Professor of Chemistry.*

Clifford A. Bunton, Ph.D., *Professor of Chemistry.*

Robert H. DeWolfe, Ph.D., *Professor of Chemistry.*

Bernard Kirtman, Ph.D., *Professor of Chemistry.*

Glenn H. Miller, Ph.D., *Professor of Chemistry.*

Roger C. Millikan, Ph.D., *Professor of Chemistry.*

Henry W. Offen, Ph.D., *Professor of Chemistry.*

Glyn O. Pritchard, Ph.D., *Professor of Chemistry (Chairman of the Department).*

Bruce F. Rickborn, Ph.D., *Professor of Chemistry.*

Pierce W. Selwood, Ph.D., *Professor of Chemistry, Emeritus.*

Hazel W. Severy, M.A., D.Sci.O., *Professor of Chemistry, Emeritus.*

Curtis B. Anderson, Ph.D., *Associate Professor of Chemistry.*

¹Michael T. Bowers, Ph.D., *Associate Professor of Chemistry.*

²Peter C. Ford, Ph.D., *Associate Professor of Chemistry.*

³J. Thomas C. Gerig, Ph.D., *Associate Professor of Chemistry.*

David O. Harris, Ph.D., *Associate Professor of Chemistry.*

¹²William C. Kaska, Ph.D., *Associate Professor of Chemistry.*

John H. Kennedy, Ph.D., *Associate Professor of Chemistry.*

Richard M. Martin, Ph.D., *Associate Professor of Chemistry.*

Donald H. Aue, Ph.D., *Assistant Professor of Chemistry.*

* NIH Career Development Awardee

¹ Absent on Leave Fall 1973.

² Absent on Leave Winter 1974.

³ Absent on Leave Spring 1974.

Thomas M. Hooker, Jr., Ph.D., *Assistant Professor of Chemistry.*

William E. Palke, Ph.D., *Assistant Professor of Chemistry.*

Stanley M. Parsons, Ph.D., *Assistant Professor of Chemistry.*

Daniel L. Purich, Ph.D., *Assistant Professor of Chemistry.*

Richard J. Watts, Ph.D., *Assistant Professor of Chemistry.*

The curricula in chemistry provide excellent undergraduate preparation for careers not only in chemical research and teaching but also in medicine, industrial and environmental law and business management. The program leading to the bachelor's degree in chemistry meets the standards recommended by the American Chemical Society for professional training in chemistry. High school students should note that they will be better prepared for this degree if their high school program includes chemistry, mathematics, physics, and courses in either German or Russian.

There is a Willard L. McRary Prize in Chemistry given to a graduating senior whose attainment in chemistry is outstanding and which reflects the promise of high quality scientific attainment, such as that which characterized the career of Professor McRary.

COUNSELING

Each entering student will be assigned an advisor who may be consulted on any matter pertaining to the student's University work. The advisor should approve the student's program. Waivers and substitutions of chemistry requirements must be discussed with the advisor.

THE DEGREE OF BACHELOR OF ARTS:

GENERAL EDUCATION

In addition to fulfilling the General Education requirements of the College of Letters and Science for the bachelor's degree, the student must complete the following requirements which satisfy sections 5 (Natural Science and Mathematics) and 6 (Electives): Biology 20, 20Z, 21, 1A, Environmental Studies 2, or Botany 20; Math 3A–B–C; Physics 8A, AL, B, BL, C, CL. The mathematics and physics courses are required in preparation for the major and may not be taken on the Pass/Not Pass option. A reading knowledge of a foreign language, although not required for professional undergraduate education in chemistry, is strongly recommended, particularly for students planning advanced study in science. German is especially useful.

THE MAJOR

Chemistry 1A–B–C, 1AL–BL–CL, 5, 5L, 130A–B–C, 6A–B–C, 113A–B–C, 114A–B. Qualified students should take 2BL–2CL instead of 1BL–1CL and 5–5L. Additional courses to complete the major in chemistry will be taken by the student after individual consultation with his advisor. A minimum of 12 additional units will be taken, normally including one organic chemistry course, two inorganic chemistry courses and one upper division laboratory course. Juniors and seniors should consult the junior or senior advisor respectively. The senior advisor approves the chemistry elective units for graduation, as well as waivers or substitutions of requirements. A student who has transferred from another school should consult the appropriate advisor as soon as possible after arriving.

FREE ELECTIVES

Although students may choose any courses to satisfy this requirement, they are urged to consider Chem 199 and other courses in Chemistry, Biochemistry, Mathematics (e.g. 5A–B), Physics, Geochemistry (Geology 125) and Chemical Engineering. These units may also be applied towards emphases in other fields. An emphasis in Biological Sciences is recommended for chemistry students preparing for medical careers. An emphasis in Economics is recommended for students interested in business or business law.

THE DEGREE OF BACHELOR OF SCIENCE:

GENERAL EDUCATION

The General Education requirements (see the pages in the catalog on General Education) are: section 1, 8 units; section 2, 0–12 units; sections 3 and 4, 31 units distributed approximately equally between them. The student must complete the following requirements under section 5: Biology 20, 20Z, 21, 1A, Environmental Studies 2, or Botany 20; Math 3A–B–C, Math 5A–B; and Physics 8A, AL, B, BL, C, CL. Math and Physics are required in preparation for the major and may not be taken on Pass/Not Passed option. A reading knowledge of a foreign language, although not required for professional undergraduate education in chemistry, is strongly recommended, particularly for students planning advanced study in science. German is especially useful.

THE MAJOR

Chemistry 1A–B–C, 1AL–BL–CL, 5, 5L, 130A–B–C, 6A–B–C, 113A–B–C, 114A–B. Qualified students should take 2BL–2CL instead of 1BL–1CL and 5–5L. Additional courses to complete the major in chemistry will be taken by the student after individual consultation with his advisor. A minimum of 18 additional units will be taken, normally including two physical chemistry courses, one organic chemistry course, one inorganic chemistry course and one upper division laboratory course. Juniors and seniors should consult the junior or senior advisor respectively. The senior advisor approves the chemistry elective units for graduation as well as waivers or substitutions of requirements. A student who has transferred from another school should consult the appropriate advisor as soon as possible after arriving.

COOPERATIVE PROGRAM—

CHEMISTRY AND CHEMICAL ENGINEERING

Chemistry students who are interested in an industrial career are advised to consider a five-year program leading to B.S. degrees in both Chemical Engineering and Chemistry. Students may obtain details of the program from the Department of Chemistry or the Department of Chemical and Nuclear Engineering. Students are advised to consider applying for simultaneous registration in Colleges of Letters and Science and Engineering in order to complete B.S. programs in both Engineering and Chemistry.

FREE ELECTIVES

Although students may choose courses to satisfy this requirement, they are urged to consider Chemistry 199 and other courses in Chemistry, Biochemistry, Mathematics (e.g. 5C), Physics, Geochemistry (Geology 125) and Chemical Engineering (e.g. 115).

SUGGESTED COURSE SCHEDULE FOR FRESHMEN STUDENTS

in the Chemistry Bachelor of Arts or Bachelor of Science Program

1st quarter		2nd quarter		3rd quarter	
Units	Course	Units	Course	Units	Course
4	Chem 1A, 1AL	4	Chem 1B, 1BL*	4	Chem 1C, 1CL*
4	Math 3A	4	Math 3B	4	Math 3C
4	English 1A	4	English 1B	–	General Education
–	General Education	–	General Education		

THE DEGREE OF MASTER OF ARTS

See *The Graduate Division Announcement*.

1. The M.A. in chemistry may be attained under either Plan I (thesis based on research) or Plan II (examination).

* Qualified students may elect the laboratory sequence 2BL, 2CL in place of 1BL, 2CL. Completion of this sequence also satisfies the Chemistry 5, 5L requirement.

2. The candidate must demonstrate a reading knowledge of scientific literature in one of three foreign languages chosen from German, French and Russian.

THE DOCTORAL PROGRAM

See *The Graduate Division Announcement*.

The Ph.D. may be obtained in any one of the special fields of Physical Chemistry, Bio-Organic, Organic and Inorganic Chemistry.

1. There is no formal unit requirement for the Ph.D. In addition to courses within his area of specialization, the candidate will normally take at least one advanced course in each of two areas outside his field.

2. Progress toward the degree is followed by a series of cumulative examinations in the field of specialization.

3. The candidate must demonstrate a reading knowledge of scientific German, French or Russian.

There is a John H. Tokuyama Memorial Loan Fund available specifically for graduate chemistry students at UCSB administered as short-term or emergency loans.

TEACHING CREDENTIALS

Either a major or a minor in chemistry may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Chemistry and in the Graduate School of Education.

Candidates who elect chemistry as their teaching major must complete the major as specified. Students interested in chemistry as a teaching minor should confer with the department chairman.

CHEMISTRY

Lower Division Courses

1A-B-C. General Chemistry. (3-3-3)

I, II, III.

The Staff

Lecture, three hours. Prerequisites: one year of high school algebra and exponents and logarithms. High school chemistry and physics are strongly recommended. Knowledge of the calculus is useful but not necessary. Concurrent registration in 1AL, 1BL, or 2BL and ICL or 2CI is required, or consent of instructor. This course is required of all majors in chemistry and most other fields of science or technology. Chemistry 1A may be used to satisfy the General Education requirement in Natural Science, section 5b or c.

A: Stoichiometry, gas laws and kinetic theory, atomic and molecular structure, the periodic table, nature of solids, liquids, and solutions, phase equilibria. B: Thermodynamics (1st and 2nd Laws), reaction kinetics, thermochemistry, oxidation and reduction, electrochemistry, chemical equilibrium. C: Structure and dynamics of the elements and their compounds.

1AL-BL-CL. General Chemistry

Laboratory. (1-1-1) I, II, III. The Staff

Laboratory, four hours. Prerequisite: Concurrent registration in 1A-B-C or consent of instructor.

Quantitative measurements demonstrating principles and developing laboratory technique. Inorganic qualitative analysis. Inorganic synthesis.

Contemporary Natural Science (Natural

Science 1A-B-C). (4-4-4) Mr. Anderson

Sequence beginning I. For course description see Natural Science listing.

2BL. General and Analytical Chemistry

Laboratory. (2) II.

Mr. Kennedy

Lecture, one hour, laboratory six hours. Prerequisite: Chem 1A, 1AL (B grades minimum) or consent of instructor. Chemistry 2BL is normally taken by students who are required to take Chemistry 5, 5L. The sequence 2BL-2CL replaces 1BL-1CL and 5-5L.

Principles of quantitative analysis. Calculations for analytical chemistry emphasizing application to chemical equilibrium. Laboratory techniques in chemical analysis and synthesis. Measurement of chemical equilibrium and reaction kinetics.

2CL. General and Analytical Chemistry

Laboratory. (2) III.

Mr. Kennedy

Lecture, one hour, laboratory, six hours. Prerequisites: Chem 1B, 2BL. Chemistry 2CL is normally taken by students who are required to take Chemistry 5, 5L. The sequence 2BL-2CL replaces 1BL-1CL and 5-5L.

Quantitative and Qualitative analysis with applications to environmental problems. Quantitative Volumetric methods. Advanced synthesis techniques.

5. Quantitative Analysis, (2) I. Mr. Kennedy

Lecture, two hours. Prerequisite: Chem 1A-B-C, or consent of instructor. Not open to students who have completed 2BL, 2CL.

Theory and technique of analytical chemistry, emphasizing the application of chemical equilibrium.

5L. Quantitative Analysis Laboratory.

(2) I. The Staff (Mr. Kennedy in charge)

Laboratory, eight hours. Prerequisite: Concurrent registration in Chem. 5 or consent of instructor.

Gravimetric and volumetric analysis, spectrophotometric, and electroanalytical techniques.

6A-B-C. Laboratory Methods of Organic Chemistry. (2-2-2) A, B: I, II, III;

C: III. The Staff

Chem 6A: lecture, one hour; laboratory, four hours. Chem 6B-C: laboratory, eight hours. Prerequisite: for 6A: Chemistry 130A or 8A (may be taken concurrently). Students whose requirements include only 6A and 6B, are urged to take 6A in the winter quarter.

Distillation, crystallization, extraction, determination of physical properties, organic synthesis, identification of organic compounds, instrumental methods in organic chemistry.

8A-B. Fundamentals of Organic Chemistry. (3-3) I, II; II, III.

Mr. Purich, Mr. Parsons

Lecture, three hours. Prerequisites: Chem 1A-B or consent of instructor.

Basic organic chemistry: structure and chemical bonding, nomenclature, classes of organic compounds, organic reactions, stereochemistry, natural products, elementary biochemistry. Designed primarily for biological sciences majors.

20. Chemistry: Its Methods and Implications for Society. (3) III. Mr. Kirtman

Lecture, three hours. No prerequisite.

Detailed discussion of various areas where chemistry and/or chemists impinge vitally on society. Areas that might be included are environmental chemistry, medicinal chemistry, relations between basic research and technology, etc. Quantitative concepts will be used but without complicated mathematical manipulations. This course is designed to meet the general educational requirement in the physical sciences. Normally offered in alternate years.

25. Introductory Chemistry. (4) I, III.

The Staff (Mr. Miller in charge)

Lecture, four hours.

This course is designed to meet the general education requirement in the physical sciences. Designed for the non-major student with special emphasis on the important aspects of modern chemistry.

(Not open to students who have completed Natural Science 1B.)

Upper Division Courses**101. Problems in Environmental Chemistry.** (3) III. Mr. Ford

Lecture, three hours. Prerequisite: ES1 and 5, or one of the following: Chem 1B, Chem 25, or Natural Science 1B.

The chemistry of air, water, and soil pollution: sources and methods of control; chemical dynamics in the environment; chemical and instrumental methods of analytical pollution monitoring; chemical quality standards and their maintenance.

Open to Chemistry majors for credit but cannot be used to satisfy required Chemistry electives. This course is the same as Env. Stds 101.

113A-B-C-D. Physical Chemistry. (3-3-3-3) A-I, B-II, C-III, D-II.

Mr. Martin, Mr. Millikan, Mr. Offen, Mr. Palke, Mr. Pritchard

Lecture, three hours. Prerequisite: Chem 1A-B-

C, Math 3A-B-C and Physics 8, or by consent of instructor.

(A) Laws of thermodynamics; free energy and chemical equilibria; change of state; solution and phase equilibria; (B) Introduction to Wave Mechanics; atomic structure and spectra; the chemical bond; molecular spectra and structure; (C) Kinetic theory of gases; chemical kinetics; (D) Properties of liquids and solutions; crystal structure; nuclear and radiation chemistry; electrochemistry; surface chemistry, polymers.

113AG-BG-CG-DG. Physical Chemistry.

(3-3-3-3) AG: I, BG: II, CG: III, DG: II.

Mr. Martin, Mr. Millikan,

Mr. Offen, Mr. Palke, Mr. Pritchard

Lecture, three hours. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 113A-B-C or the respective part thereof in this institution.

114A-B. Physical Chemistry and Instrumental Analysis Laboratory.

(4-4) A: II, B: III. Mr. Bowers

Lecture, one hour; discussion, one hour, laboratory, eight hours. Prerequisite Chem 114A; Chem 5, 5L or equivalent, Chem 113A concurrently with 113B.

Lecture: Technique of physical measurement, error analysis and statistics, special topics. Laboratory: Experiments involving ultraviolet, infrared, and nuclear magnetic resonance spectroscopy; dipole moment, magnetic susceptibility, light scattering, viscosity of polymers; calorimetry, gas laws, thermal conductivity, phase diagrams; solution kinetics; electroanalytical and chromatographic techniques.

115A-B-C. Fundamentals of Quantum Chemistry. (3-3-3) A-I, B-II, C-III.

Mr. Palke

Lecture, three hours. Prerequisites: Chemistry 113A-B-C, Math 5A or consent of instructor.

(A) Introduction to Quantum Mechanics-Postulatory Approach; particle in box, on ring, harmonic oscillator; linear operator theory, matrix algebra; hydrogen atom; perturbation theory, variation theory; applications. (B) Molecular orbital theory and valence bond theory; Huckel theory (secular equn.) applications to conjugated systems, electronic spectra, and term symbols; introduction to infrared, Raman, and microwave spectroscopy. (C) Introduction to NMR, EPR, Group Theory; applications.

115AG-BG-CG. Fundamentals of Quantum Chemistry. (3-3-3) AG: I, BG: II, CG: III.

Mr. Palke

Lecture, three hours. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 115A-B-C in this institution.

117. Statistical Thermodynamics. (3) I.

Mr. Hooker, Mr. Kirtman, Mr. Offen

Lecture, three hours. Prerequisite: Chem, 113A-B-C or consent of instructor.

Fundamentals of statistical thermodynamics, partition functions for ideal gases and crystals, quantum statistics, calculations of thermodynamic properties.

117G. Statistical Thermodynamics. (3) I.

Mr. Hooker, Mr. Kirtman, Mr. Offen
Lecture, three hours. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 117 at this institution.

118. Photochemistry and Radiation

Chemistry. (3) III. Mr. Martin,
Mr. Millikan and Mr. Offen

Lecture, three hours. Prerequisite: Chem 113B.
Interaction of light and matter, reaction paths from electronically excited molecules, flash photolysis, high energy radiation.

118G. Photochemistry and Radiation

Chemistry. (3) III. Mr. Martin,
Mr. Millikan and Mr. Offen

Prerequisite: Chem 113B.
Lecture, three hours. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 118 at this institution.

120. Polymer Chemistry. (3) II. Mr. Miller

Lecture, three hours. Prerequisite: Chem 1A-B-C, 1AL, BL, CL, 130A-B-C.

Mechanism and kinetics of polymerization: Vinyl, condensation, and diene polymers; ionic polymerizations; block and graft polymers; copolymerization; physical chemistry of high polymers; polymer degradations; radiation chemistry of polymer systems.

123. Fundamentals of Environmental

Chemistry. (3) Mr. Millikan, The Staff

Lecture, two hours, discussion, two hours. Prerequisites: Chem 1A-1B-1AL, BL, CL, 8A-B, or 130A-B-C, 113A-B.

Chemical nature of pollution sources. Principles of analytical monitoring and control of pollution sources. The chemistry of pollutants in the environment. Chemical quality standards and chemical monitoring of the environment. Not offered every year.

130A-B-C. Elementary Organic Chemistry.

(3-3-3) A: I; B: II; C: III.

Mr. Aue, Mr. DeWolfe, Mr. Rickborn

Lecture, three hours. Prerequisite: Chemistry 1A-B-C, or consent of instructor. Chem. 6A-B-C is to be taken concurrently. If student's major does not require 6-C, then 6A-B may be deferred to winter or spring quarters.

Structure and properties of organic compounds, nomenclature, classes of organic compounds, chemical bonding, synthetic organic chemistry, chemistry of natural products.

130AG-BG-CG. Elementary Organic

Chemistry. (3-3-3) AG: I, BG: II, CG: III.

Mr. Aue, Mr. DeWolfe,
Mr. Rickborn

Lecture, three hours. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 130A-B-C at this institution.

131A-B-C. Advanced Organic Chemistry.

(3-3-3) A: I; B: II; C: III.

Mr. Anderson, Mr. Bunton and Mr. Rickborn
Lecture, three hours. Prerequisite: Chem. 130A-

B-C and 113A-B-C, or consent of instructor. A: Physical organic chemistry-mechanism, stereochemistry, structure and reactivity. B and C: Mechanism and synthesis in organic chemistry.

131AG-BG-CG. Advanced Organic

III. Mr. Anderson, Mr. Bunton
and Mr. Rickborn

Lecture, three hours. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 131A-B-C in this institution.

134. Advanced Organic Laboratory. (3)

Mr. Aue
Lecture, one hour; laboratory, eight hours. Prerequisites: Chem 130A-B-C and Chem 6A-B-C, or consent of instructor.

Methods of organic reactions and synthesis; techniques of product isolation. Not offered every year.

136. Qualitative Organic Analysis. (2) I.

Mr. Aue, Mr. DeWolfe, Mr. Rickborn

Lecture, 2 hours. Prerequisite: Chem 130A-B-C and Chem 6A-B-C, or consent of instructor.

Identification of unknown organic compounds; separation of mixtures; derivatives, instrumental methods; micro techniques.

136L. Qualitative Organic Analysis

Laboratory. (2) I.

Mr. Aue, Mr. DeWolfe, Mr. Rickborn

Laboratory, eight hours. Prerequisite: Concurrent registration in Chem 136.

141. Bio-Organic Reactions. (3) III.

Mr. Bruice

Lecture, three hours. Prerequisite: Chem 130A-B-C, Chem 113A-B-C, or consent of instructor. Biology 108 is recommended.

A lecture course in bio-organic mechanisms. The types of chemical transformations of importance in biochemical reactions will be discussed from a physical organic point of view. Mechanisms of nucleophilic displacement reactions on carbonyl and pentacovalent phosphorous, hydration reactions, chemical reactions of cofactors, enzymic catalysis and enzyme models are among the topics considered.

151. Advanced Analytical Chemistry.

(3) Mr. Kennedy

Lecture, three hours. Prerequisite: Chem 5.

A detailed discussion of principles of analytical chemistry with emphasis on acid-base and redox equilibria, and on separation. Not offered every year.

173A-B. Advanced Inorganic Chemistry.

(3-3) A:II, B: I. Mr. Ford, Mr. Kaska

Lecture, three hours. Prerequisite: Chem 113A-B-C or consent of instructor. 173A is not a prerequisite for 173B.

A: Inorganic and organometallic chemistry of the non-transition elements and their compounds: descriptive reaction chemistry, bonding theory, stereochemistry and introductory spectroscopy. B: Inorganic and organometallic chemistry of the transition metals and their complexes: introductory ligand field theory and spectroscopy, descriptive chemistry, and reaction mechanisms.

173AG-BG. Advanced Inorganic Chemistry.

(3-3) AG: II, BG: I. Mr. Ford, Mr. Kaska

Lecture, three hours. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 173A-B in this institution.

174. Inorganic Synthesis and Laboratory**Techniques. (3) III. Mr. Kaska**

Lecture, 1 hour; laboratory, eight hours. Prerequisite: 173A-B (may be taken concurrently) or consent of instructor.

Methods of inorganic reactions and synthesis. Spectroscopic identification of inorganic compounds.

175. Physical-Inorganic Chemistry. (3) III.**Mr. Watts, Mr. Ford**

Lecture, three hours. Prerequisite: 173A-B or consent of instructor.

Bonding theory, thermodynamics, and structure of inorganic compounds. Applications of physical techniques to the study of inorganic (and organo-metallic) reactions and their mechanisms.

175G. Physical-Inorganic Chemistry. (3) III.**Mr. Watts, Mr. Ford**

Lecture, three hours. Open only by consent of the Chemistry Graduate Advisor to graduate students who have not taken 175 in this institution.

195AA-ZZ. Chemical Instrumentation (3-5)**I, II, III. The Staff**

Discussion, one hour; laboratory six to twelve hours.

Prerequisite: Consent of Instructor and Undergraduate adviser.

With guidance from a faculty member the student will learn advanced laboratory techniques by independent experimental work and weekly consultations with the instructor. This course may be used to satisfy the upper division laboratory requirement. Each faculty member has a unique letter designation which is the same as for the Chem 596 series.

196AA-ZZ. Special Courses. (1-4) I, II, III.**The Staff (Mr. Kennedy in charge)**

To be taken with the consent of the instructor and the undergraduate adviser of the department as a means of meeting special curricular problems. Each faculty member has a unique letter designation which is the same as for the 594-599 series.

199AA-ZZ. Independent Studies in**Chemistry. (1-5) I, II, III.****The Staff (Mr. Kennedy in charge)**

Prerequisites: Upper Division standing and consent of both instructor and undergraduate adviser.

Directed study, normally experimental, to be arranged with individual faculty members. 199 courses are limited to no more than 5 units in one quarter. Each faculty member has a unique letter designation which is the same as for the 594-599 series.

Graduate Courses**212. Chemical Dynamics. (3) I or II.****Mr. Martin, Mr. Millikan**

Lecture, three hours. Prerequisite: Consent of instructor.

Potential energy surfaces, collision dynamics, deri-

vation of reaction-rate expressions, relaxation rates and methods, bimolecular atom-transfer reactions, unimolecular reactions, theory of complex reactions, bimolecular energy transfer.

213. Advanced Thermodynamics. (3) I.**The Staff**

Lecture, three hours. Prerequisite: Consent of instructor.

Emphasis on irreversible processes. Review of classical thermodynamics, definition of flows and forces; conservation laws; local entropy production; phenomenological equations relating flows and forces; Onsager's reciprocal relations; principle of minimum entropy production. Applications to problems of biological and physical interest.

214A-B. Statistical Mechanics. (3-3) II, III.**Mr. Hooker**

Lecture, three hours. Prerequisite: Consent of instructor.

A: Theoretical basis of classical and quantum statistical mechanics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics. Partition functions. Calculation of thermodynamic properties of ideal systems. B: Applications—diatomic molecules, nuclear spin statistics, polyatomic molecules, solid state, fluctuation theory, imperfect gases, liquids.

215A-B. Principles of Quantum Mechanics.**(3-3) II, III. Mr. Kirtman, Mr. Palke**

Lecture, three hours. Prerequisite: Consent of instructor.

The failures of classical theory. The Schrodinger equation, wavefunctions, and their interpretation. Free particles and wave packets. Interaction of particles and potentials. Coulomb potential. Harmonic Oscillator. Angular Momentum. Perturbation Theory. Systems of Identical Particles. Time Dependent Perturbation Theory.

216. Selected Topics in Quantum Chemistry.**(1-4) I, II, III.****Mr. Harris, Mr. Kirtman, Mr. Palke**

Lecture. 1-4 hours. Prerequisite: Consent of instructor.

A selected topic will be discussed. Examples: applications of group theory, electronic structure, scattering. Course may be repeated with a different topic (18 units maximum).

219. Selected Topics in Physical Chemistry.**(1-4) I, II, III.****Mr. Bowers, Mr. Harris, Mr. Hooker,****Mr. Kirtman, Mr. Martin, Mr. Miller,****Mr. Millikan, Mr. Offen, Mr. Palke,****Mr. Pritchard**

Lecture. 1-4 hours. Prerequisite: Consent of instructor.

A selected topic will be discussed. Examples: magnetic resonance, condensed phases, kinetic spectroscopy. Course may be repeated with a different topic (18 units maximum).

230. Modern Instrumental Techniques in**Organic Chemistry. (3) The Staff**

Lecture, three hours. Prerequisite: Graduate standing or consent of instructor.

Practical spectroscopy including infra-red and ultraviolet, but with primary emphasis on nuclear magnetic resonance, electron spin resonance, and mass spectroscopy. Not offered every year.

231. Advanced Physical Organic Chemistry.

(3) II. Mr. Bunton, Mr. DeWolfe

Lecture, three hours. Prerequisite: Consent of instructor.

Study of the structural and environmental factors which influence the course of chemical reactions of organic compounds.

232. Carbonium Ions. (3)

Mr. Bunton, Mr. DeWolfe

Lecture, three hours. Prerequisite: Graduate standing or consent of instructor.

Reactions and rearrangement of carbonium ions; non-classical ions; allylic ions. Not offered every year.

233. Advanced Synthetic Chemistry.

(3) Mr. Aue

Lecture, three hours. Prerequisite: Consent of instructor.

A comprehensive discussion of modern synthetic organic methods. Including the applications of addition, condensation, substitution and rearrangement reactions. Not offered every year.

234. Carbanions. (3)

Mr. Kaska, Mr. Rickborn

Lecture, three hours. Prerequisite: Graduate standing or consent of instructor.

Chemistry of carbanions, electrophilic substitution at saturated carbon, organometallic compounds of groups I and II, A and B, and IIIA. Not offered every year.

235. Conformational Analysis. (2)

Mr. Rickborn, Mr. Anderson

Lecture, two hours. Prerequisite: Graduate standing or consent of instructor.

Conformational effects in the structure and reactivity of organic compounds. Not offered every year.

236. Molecular Orbital Theory. (3) The Staff

Lecture, three hours. Prerequisite: Graduate standing or consent of instructor.

Applications of molecular orbital theory to organic chemistry. Not offered every year.

237. Organometallic Compounds of the Transition Metals. (3)

Mr. Anderson, Mr. Kaska

Lecture, three hours. Prerequisite: Graduate standing or consent of instructor.

Synthesis, structure, and reactions of organometallic compounds of the transition metals. Not offered every year.

238. Selected Topics in Natural Products.

(3) I, II, III.

The Staff (Mr. Aue in charge)

Lecture, 3 hours. Prerequisite: Consent of instructor.

Selected topics from Natural Products. The contents of this course will vary. Course may be repeated with different topic. (18 units maximum).

239. Selected Topics in Organic Chemistry.

(3) I, II, III.

The Staff (Mr. Anderson in charge)

Lecture, three hours. Prerequisite: Consent of instructor.

Selected topics from organic chemistry. The contents of this course will vary. Course may be repeated with different topics (18 units maximum).

242. Terpenes. (2)

Mr. Aue

Lecture, two hours. Prerequisite: Graduate standing or consent of the instructor.

The occurrence, isolation, structural elucidation, reactions and biogenesis of terpenes. Not offered every year.

243. Steroids. (2)

Mr. Aue

Lecture, two hours. Prerequisite: Graduate standing or consent of the instructor.

The occurrence, structural elucidation, reactions and synthesis of steroids. Not offered every year.

244. Carbohydrates. (3)

The Staff

Lecture, three hours. Prerequisite: Chem. 233 or equivalent.

Chemical replacement of one or more hydroxyl functions of sugars by such groups as amino, deoxy, or thio. Conversion of straight chain to branched chain sugars. Inversion of configuration. Blocking technics to perform these reactions on a single hydroxyl group. Not offered every year.

250. Seminar in Biological Chemistry (2)

I, II, III.

The Staff

Lecture, two hours. Prerequisite: Consent of instructor.

Presentation of seminar in the areas of Biophysical, Bio-Organic, or Biological Chemistry. May be substituted for Chemistry 290 requirement.

251A-B. Chemical Aspects of Biological

Systems (3-3) A:I, B:II.

The Staff

Lecture, three hours. Prerequisite: Consent of instructor. Open to undergraduates by petition.

A: Molecules of Biochemical importance. A survey of physical, chemical, and dynamic properties of biological macromolecules and other molecules of significance to biochemistry.

B: Chemical aspects of intermediary metabolism. The chemistry of anabolic and catabolic pathways for nucleic acids, proteins, and cofactors.

252. Enzyme Dynamics (3) III

The Staff

Lecture, three hours. Prerequisite: Chemistry 251A-B or consent of instructor.

Study of the dynamics of reactions involving biological macromolecules. A kinetic approach to enzyme mechanisms and enzyme-macromolecule interactions.

254A-B. Magnetic Resonance Techniques in Biological Systems (3-3) A:I, B:II.

The Staff

Lecture, three hours. Prerequisite: Consent of instructor.

A discussion of the theory and practice of magnetic resonance methods currently used in studies of proteins, nucleic acids and polysaccharides both individually and in complex structures such as membranes. NMR and EPR techniques will be included but the emphasis will be on high-resolution ^1H and ^{13}C spectroscopy. Normally offered in alternate years.**255A-B-C. Methods in the Characterization of Biological Macromolecules (3-3-3)**

A:I; B:II; C:III.

Mr. Cassman,

Mr. Hooker, Mrs. Lee

Lecture, two hours; Discussion, one hour. Prerequisite: Physical chemistry, biochemistry, calculus, or consent of instructor.

A: Introduction to biophysical chemistry. Macro-

molecular structure and conformation, intermolecular interactions, and multiple equilibria.

B: Theory and practice of physical methods employed to study macromolecules. Spectroscopic techniques, including ORD, CD, UV, fluorescence, and phosphorescence, NMR and ESR.

C: Theory and practice of physical methods employed to study macromolecules. Hydrodynamic properties, including sedimentation, diffusion, viscosity, osmotic pressure.

258. Mechanisms of Organic and Enzymatic Reactions. (3) I, II, III. Mr. Bruice

Lecture, three hours. Prerequisite: Consent of instructor.

Formal presentation of seminars on recent literature dealing with mechanisms of organic and enzymatic reactions accompanied by open discussion of the topics considered.

259. Selected Topics in Biological Chemistry. (1-4) I, II, III. The Staff

Lecture, one to four hours. Prerequisite: Consent of instructor.

Selected topics from Bio-Organic, Biophysical, or Biological Chemistry. The contents of this course will vary. Course may be repeated with a different topic.

261A-B-C. Enzyme Mechanisms. (3-3-3) A:I, B:II, C:III. Mr. Bruice, Mr. Parsons

Lecture, three hours. Prerequisite: Chemistry 251A-B, Chemistry 252, or consent of instructor.

Presentation of the chemistry, structure, and function of enzymes followed by discussion of pertinent organic model systems relating to the specific enzymes. Normally offered in alternate years.

273. Structural Inorganic Chemistry. (3) The Staff

Lecture, three hours. Prerequisite: Consent of instructor.

Molecular aggregation and structural analysis. Theories of properties and experimental determination of structure; applications to solid state chemistry; heterogeneous catalysis. Not offered every year.

279. Selected Topics in Inorganic Chemistry. (3) I, II, III. The Staff (Mr. Ford in charge)

Lecture, three hours. Prerequisite: Consent of instructor.

Selected topics from inorganic chemistry. The content of these courses will vary. Course may be repeated with different topics. (18 units maximum)

290. Seminar in Chemistry. (2) I, II, III. The Staff

Lecture, one hour. Prerequisite: Consent of instructor.

Presentation of seminar required of all chemistry graduate students. Course may be repeated.

291. Special Seminar in Chemistry. (2) I, II, III. The Staff

Lecture, one hour. Prerequisite: Consent of instructor.

Specialized seminar topics. May be repeated.

594AA-594ZZ. Special Topics. (1-4) I, II, III. The Staff

Special seminar on research subjects of current interest.

595AA-595ZZ. Group Studies. (2) I, II, III. The Staff

Critical review of research in selected fields. Regular meetings are held in which the student presents for discussion information from the recent chemical literature.

596AA-596ZZ. Directed Reading and Research. (2-12) I, II, III. The Staff

Individual tutorial. Instructor usually student's major professor. A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division. No more than half the units necessary for the master's degree may be taken in 596.

597AA-597ZZ. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations. (1-3) I, II, III. The Staff

Instructor should be the student's major professor or chairman of his doctoral committee. No unit credit allowed toward advanced degree(s). S/U grade.

598AA-598ZZ. Master's Thesis Research and Preparation. (1-12) I, II, III. The Staff

Only for research underlying the thesis, writing the thesis. Instructor should be the chairman of the student's thesis committee. No unit credit will be given. S/U grade.

599AA-599ZZ. Ph.D. Dissertation Preparation. (1-12) I, II, III. The Staff

Only for preparation of the dissertation. Instructor should be the chairman of the student's doctoral committee. S/U grade.

CHICANO STUDIES

Jesús Chavarría, Ph.D., Assistant Professor of History and Chicano Studies.

Amado Padilla, Ph.D., Assistant Professor of Psychology and Chicano Studies (Acting Chairman of Department).

Pedro Castillo, M.A., Associate in History and Chicano Studies.

Jorge Huerta, M.A., Associate in Dramatic Art and Chicano Studies.

Salvador Rodríguez del Pino, M.A., Associate in Chicano Studies.

Fernando Padilla, M.A., Associate in Chicano Studies.

Richard Valencia, M.A., Lecturer in Chicano Studies.

The Department of Chicano Studies is engaged in the development of a program of formal studies focusing upon the Chicano from the perspective of various disciplines, and also from a perspective of past and present which looks to the future. This interdisciplinary program subjects to critical analysis the Chicano reality: psychological, social, economic, political, historical, educational, linguistic and artistic.

In seeking to understand the Chicano present, the program delves into significant periods of Mexican history; for example: early nineteenth century conflict between Anglos and northern Mexicans; the U. S. War against Mexico: 1846-1848; and the Conquest: 1848-present. In seeking to understand the nature of contemporary Chicano culture the program probes still further into the historical past, explores still more deeply long roots of tradition which reach as far back as the pre-Columbian peoples of Mexico, and which are ultimately part of the broader context of Latin American history and culture.

The interdisciplinary character of the curriculum is an innovative feature of the program. The department has established—as the norm—small, seminar-type classes conducted simultaneously by several professors, from different but related disciplines. It should be noted that many of the department's upper division courses are also cross-listed with other departments.

The bilingual nature of the program is another innovation which the department has stressed. It is planned that an ever-larger number of courses will be conducted in Spanish, and that this will remain a characteristic feature of the program.

The involvement of the student in the planning and development of the program is still another innovation which began with the genesis itself of the entire Chicano Studies program at UCSB. This comprehensive program includes three major components which function as one integrated effort, devoted, ultimately, to directing the three principal functions of the university-teaching, research, and public service—to the Chicano community. The Department of Chicano Studies has responsibility for the academic program, and works closely with the Chicano Student Services program, which provides students such support services as counselling, and financial and tutorial assistance. The Center for Chicano Studies is responsible for research, publications, and community services.

The creation of the Department of Chicano Studies represents a long-due legitimization of the study of the Chicano as a distinct field of study within the College of Letters and Science. The program is designed for students desiring a meaningful education that is broadly based even as it focuses upon the Chicano experience in a specialized manner. It is especially recommended for those planning careers of special importance for the Chicano community: education, law, medicine, civil and social services. It has also been designed with the student in mind who plans to pursue graduate studies in the humanities and social sciences.

CHICANO STUDIES

1A-1B-1C. Introduction to Chicano Studies.

(4-4-4) I, II, III.

The Staff

An introduction to the historical and contemporary development of the Chicano community, interdisciplinary in nature, and focusing upon such components as the educational, sociological, and political. The course will critically analyze the societal context in which La Raza has sought to maintain and develop its culture.

12. Chicano Spanish Conversation (4)

Salvador Rodriguez del Pino

Emphasis will be given to the acquisition of oral skills, comparative studies on pronunciation, difficult grammatical idiomatic expressions and Chicano Spanish lexicon.

101A-B. History of the Chicanos. (4-4) I, II.

Mr. Castillo

The history of the Chicanos, 1821 to the present; traces the social-cultural lifeline of the Mexicans who have lived north of Mexico.

101Q. Special Studies in Chicano History.

(4) III.

Mr. Castillo

Studies in selected aspects of Chicano history, with an emphasis on social and economic history.

115. The Psychology of the Chicano Child.

(4) I, II, III. Mr. Padilla, Mr. Valencia

An analysis of the development and structure of personality in the Chicano child. The course will focus on emotional-social growth within the bilingual, bi-cultural framework in which the personality of the Chicano child develops.

120. Bilingualism and the Chicano. (4)

An introduction to the study of bilingualism and the Chicano. The course will focus on the sociolinguistic and educational implications of bilingualism.

121. Chicano Spanish: Comparative Syntax. (4)

A comparative study of Standard Spanish, Chicano Spanish and English syntax. Emphasis on

phonetics, pronunciation, accents and sentence structure and construction. Creative writing will be stressed.

144. The Chicano Community. (4) I, II, III.

The Staff

Origins of the Chicano in rural Mexico; context of contact; patterns of settlement in the United States; the Chicano community; social structure and social change; acculturation and generational patterns; community leadership and change.

170. Chicano Community Organizations.

(4) I, II, III.

The Staff

A study of change in the functions of organized activity and in the role of the leadership within the Chicano community.

174. Chicano Politics. (4) I, II.

The Staff

Political life in the barrio, political behavior of the Chicano community and representation of Chicanos by elected officials and interest groups.

188A-B. Chicano Drama: Art and Life.

(4-4) I, II, III.

The Staff

Focusing on drama as artistic expression and social document, the course analyzes the development of Chicano drama in dialectical interplay with the history and culture of the Chicano.

190. Reading Chicano Literature.

(4) I, II, III.

The Staff

Selected readings in representative works of the Chicano, in the context of a broad inquiry into the nature and function of literature.

198. Undergraduate Seminar. (4) I, II, III.

The Staff

Prerequisites: Two courses in Chicano Studies, permission of instructor prior to enrollment, and Upper Division standing.

Special topics in Chicano Studies. To be offered intermittently.

CLASSICS

Keith Aldrich, Ph.D., *Professor of Classics.*

¹Howard Clarke, Ph.D., *Professor of Comparative Literature (Classics).*

^{2,3}David C. Young, Ph.D., *Professor of Classics.*

Alva W. Bennett, Ph.D., *Associate Professor Classics (Chairman of the Department).*

Joseph S. Margon, Ph.D., *Associate Professor of Classics.*

Apostolos Athanassakis, Ph.D., *Assistant Professor of Classics.*

Borimir Jordan, Ph.D., *Assistant Professor of Classics.*



H. D. F. Kitto, B.A., F.B.A., F.R.S.L., *Lecturer in Classics.*

L. Purcell Weaver, M.A., *Lecturer in Classics.*

The field of Classics incorporates the study of the civilization of ancient Greece and Rome, and of the world and time over which the Greeks and Romans extended their influence. The heart of classical studies is the collection of literary, historical, philosophical, and scientific writings from Homeric down to Byzantine times, which survived to direct the development of modern Western culture. The reconstruction and interpretation of these writings is the primary responsibility of the classical philologist. His colleagues frequently are specialists in some particular field, such as epigraphy, the study of ancient inscriptions; or papyrology, the study of papyrus remains. Others devote their talents to research in specific cultural phenomena, such as Greek political theory, classical art, or mythology. Still others turn their attention to the problems of language, grammar, and linguistics. All these studies are inter-related, and all the classicists pursuing them are in a real sense working toward the same goal: a wider picture of Graeco-Roman culture as a means toward a clearer understanding of our own.

THE MAJOR IN CLASSICS

The Classics major program offers a challenging but rewarding course of study in the unified field of Graeco-Roman culture. It is designed to accommodate both the aspirant to graduate studies in Classics or related fields and the student primarily interested in an undergraduate liberal arts major.

a) Preparation for major: in addition to Greek 105 and Latin 105 (or equivalents) with a grade of C or higher, the student must pass History 4A-4B and Philosophy 20A.

² Absent on Leave Winter 1974.

³ Absent on Leave Spring 1974.

⁴ Absent on Leave 1973-74.

b) The major must complete a minimum of 36 units in upper division Classics, Greek, and Latin courses, including Latin 110A–B–C and Greek 140A–B–C (6 units). The remaining 30 units must come from courses numbered 106 or above (Greek 104 and 105 and Latin 105 do not count toward the departmental upper division requirements); of these 30 units, the minimum in either language is 12.

c) At least one year of German or the equivalent is strongly recommended for the major who intends to pursue the field of Classics beyond the B.A. degree. It is also recommended that some of the student's electives be chosen from Classics 37–40 and from closely related courses in art, history, and philosophy.

THE MAJOR IN GREEK

a) Preparation for major: same as for Classics major.

b) The major must complete a minimum of 36 units in upper division Greek and Latin courses (exclusive of Greek 105 and Latin 105), including Greek 140A–B–C; the minimum in Greek is 23 units, and the minimum in Latin is 4.

c) Same as for Classics major.

THE MAJOR IN LATIN

a) Preparation for major: same as for Classics major.

b) The major must complete a minimum of 36 units in upper division Latin and Greek courses (exclusive of Latin 105 and Greek 105), including Latin 110A–B–C; the minimum total in Latin is 23 units, and the minimum in Greek is 4.

c) Same as for Classics major.

THE MAJOR IN CLASSICAL CIVILIZATION

The major in Classical Civilization is designed for those students who wish to pursue a basic liberal arts degree and prefer a general, interdisciplinary program to specialization in the Classical languages and their literature.

a) Preparation for major: Classics 37, 38, 40, and Philosophy 20A, and Greek or Latin 1, 2, 3 and 105 or 106.

b) The major must complete 40 upper division units from the courses listed below, distributed among the specified groups as indicated.

1. Classics 100A–B (8 units)

2. At least two courses from the following (Group I): Classics 102, 120, 125, 130, 135 (8 units).

3. At least five courses from Groups II–IV, a minimum of one course in each group.
Group II: History 111A–B, 112, 113A–B, Political Science 187; Classics 105; Group III: Philosophy 151, 152, 153, 156, Religious Studies 132, 134, 135; Group IV: Art 152D–E–F–G–H, Classics 180 (20 units)

4. The tenth required course may come from any of the above groups or from any Greek or Latin course numbered 111 or higher.

THE DEGREE OF MASTER OF ARTS

1. In addition to the general requirements for admission to graduate status, the applicant should have an undergraduate major or the equivalent in Greek, Latin, or Classics. Other students may be admitted if they demonstrate proficiency in the languages, but they will be required to make up any deficiencies in their undergraduate training, in addition to the regular course work for the M.A. degree.

2. The department offers the M.A. degree under Plan I (30 units and thesis) and Plan II (36 units without thesis). In either plan, more than half of the units must be in graduate courses within the department. The remaining units may come from upper division courses in the department or from approved courses in other departments such as art, history, and philosophy, if they are relevant to the student's program.

3. The following course is required: pro-seminar in bibliography and methodology (Classics 201A).

4. The candidate must meet the following requirements before taking the M.A. comprehensive examination: a) reading knowledge of German, French, or Italian (by examination) b) sight translation (by examination) c) composition (by course credit or examination) d) ancient history.

5. Successful performance in the M.A. comprehensive examination on Greek and Latin literature.

TEACHING CREDENTIALS

The major in Classics or the majors in Greek or Latin may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A Classical Civilization major can be used to obtain a teaching credential in three areas: Classical Studies, Humanities, and Ethnic Studies.

Latin may be chosen as a teaching minor for any of the named credentials for those who desire to fulfill the prescribed courses listed above.

CLASSICS

Lower Division Courses

Courses in Translation

20A-B. Greek and Latin in Current English.

(4-4) II, III. Mr. Athanassakis

Study of the classical element in English etymology.

37. Greek Literature in Translation.

(4) I, II. The Staff

Reading and lecture survey of principal Greek writers, such as Homer, Pindar, and Thucydides.

38. Latin Literature in Translation.

(4) III. The Staff

Reading and lecture survey of principal Roman writers, such as Catullus, Horace, and Vergil.

40. Greek Mythology. (4) I, II, III. The Staff

Study of the rationale of mythology, and the various patterns of mythography. Readings in primary literary sources.

Upper Division Courses

100A-B. Greek and Roman Civilization.

(4-4) II, III. Mr. Margon, Mr. Weaver

Introduction to the various aspects of Greco-Roman civilization, such as art, education, daily life, festivals, law, religion, science, and sports. 100A: Greek; 100B: Roman.

102. Greek Tragedy. (4) I. The Staff

Plays by Aeschylus, Sophocles, and Euripides in English translation. The role of tragedy in Greek culture and literature.

105. Ancient Athletics. (3) II. Mr. Young

Study of specific sports and events, history of ancient Olympics and other meets, and of individual achievements; professionalism, training, facilities, and place of athletics in Greek culture, literature, and art.

* Not to be given 1973-74.

120. Greek and Latin Lyric Poetry. (4) II.

Mr. Bennett

Development, forms, and interpretation of ancient lyric poetry; such authors as Sappho, Pindar, Catullus, and Propertius in English translation.

*125. Greek and Roman Historiography.

(4) III. Mr. Jordan

Development of history as a genre; such authors as Herodotus, Thucydides, Livy, and Tacitus in English translation.

130. Comedy and Satire. (4) III. Mr. Aldrich

The comic playwrights, such as Aristophanes and Plautus, and satirists, such as Lucian and Juvenal, in English translation.

135. Seneca and Roman Tragedy. (4) II.

Miss Shelton

Discussion of the origin and development of Roman tragedy, with specific emphasis on the tragedies of Seneca. Study of character portrayal, plot development, theatrical effect, and other elements, such as psychological exploration, typical of Senecan tragedy.

180. Classical Archaeology. (4) II.

Mr. Jordan

Prerequisite: Anthropology 3 or one upper division course in a related field, such as classical languages, prehistory, ancient art or history, or permission of instructor.

An introduction to the methods of classical archaeology and a survey of the major monuments and sites of Greece.

199. Independent Studies in Greek and

Latin. (1-5) I, II, III. The Staff

Independent study in areas in which both Greek and Latin are necessary. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses

201A-B. Pro-seminar. (2-2) I, II.

Mr. Aldrich and Mr. Young

Bibliography, methodology, and history of classical scholarship.

202. Comparative Greek and Latin Morphology and Syntax. (4) II.

Mr. Athanassakis

Introduction to classical linguistics; history of Greek and Latin in their Indo-European context (including Mycenaean Greek).

203. Mythology and Religion. (4) III.

Mr. Aldrich

Greek myths: development, variants, and literary use. Greek and Roman religions.

211-212-213. History of Greek and Latin Literature. (2-2-2) I, II, III. The Staff

Survey of development of poetry and prose; major authors. Special reading and reports.

253. Epigraphy and Paleography. (4) III.

Mr. Jordan

596AA-ZZ. Directed Reading and Research. (2-4) I, II, III. The Staff

Prerequisite: Written proposal, approved by Department chairman and filed with Graduate Division. Individual Tutorial.

597. Preparation For Comprehensive Exams. (1-6) I, II, III.

Prerequisites: Permission of graduate adviser and chairman.

Study for Master's comprehensive examinations and Ph.D. examinations. No unit credit allowed toward degree.

598AA-ZZ. Master's Thesis Research and Preparation. (1-4) I, II, III. The Staff

Prerequisites: Permission of instructor and graduate adviser. Independent Research. No unit credit toward degree.

GREEK

Lower Division Courses

1. Elementary Greek. (4) I, III. The Staff

2. Elementary Greek (continuation of Greek 1). (4) I, II. The Staff

Prerequisite: Greek 1 or equivalent.

3. Intermediate Greek. (4) II, III. The Staff

Prerequisite: Greek 2 or equivalent. Review of syntax and reading of Attic prose writers.

4. Accidence and syntax. (1) I, II, III.

The Staff

Prerequisite: Greek 3 or equivalent. Systematic study of declensions and conjugations; peculiarities of syntax. No reading. May be taken concurrently with courses for which it is prerequisite; an A or B grade in Greek 3 will be considered the equivalent of Greek 4 where the latter is a prerequisite.

Upper Division Courses

Greek 105 or Greek 106 is equivalent to quarter course 5 for fulfillment of the General Education requirement in Foreign Language.

105. Introduction to Prose: Attic Orators.

(4) I, III.

The Staff

Prerequisite: Greek 4 or equivalent.

Advanced reading and syntactical analysis.

106. Introduction to Poetry: Homer. (4) II.

Prerequisite: Greek 4 or equivalent. The Staff

Reading in the *Iliad*. Homeric grammar and metrics. Greek 104 (or 105) and 106 or their equivalent are prerequisite to all higher language courses in Greek.

139. New Testament Greek. (4) II.

Mr. Pearson

Prerequisites: Greek 104 (or 105) and 106, or permission of instructor. Reading in the Greek New Testament, with comparative study of related materials from Greek literature of the Hellenistic-Roman period (same as Religious Studies 139).

140A-B-C. Greek Prose Composition.

(1-1-1) Yr.

The Staff

Advanced grammar, sight reading, and extended prose composition. It is recommended that this series of courses be taken together with Greek 161-2-3.

*141. Pre-Socratic Philosophers. (4) I.

Mr. Young

Philological study in materials ranging from Thales through Democritus.

*142. Plato. (4) II.

Mr. Margon

Reading and study of a complete Socratic dialogue.

*143. Post-Platonic Philosophers. (4) III.

Mr. Margon

Philological study in materials ranging from Aristotle through Plotinus.

*151. Euripides. (4) I.

Mr. Aldrich

Introduction to the tragic genre. Reading and study of a complete play.

*152. Sophocles. (4) II.

Mr. Young

A complete tragedy, plus readings in Sophoclean literature.

*153. Aeschylus. (4) II.

The Staff

Study of a complete tragedy. Problems of textual criticism.

161. Hesiod, Theognis, and Solon. (4) I.

Mr. Aldrich

An introduction to archaic religion, mythology, ethics, and historiography.

*162. Herodotus. (4) I.

The Staff

Reading and study of the History of Herodotus.

163. Thucydides. (4) III.

Mr. Jordan

Reading and research in the historical, literary, and philological aspects of Thucydides.

*164. Aristophanes. (4) II. Mr. Athanassakis

Reading of a complete play; history of Greek comedy.

* Not to be given 1973-74.

171. Lyric Poets and Homeric Hymns.

(4) I. **The Staff**
 Exclusive of the choral poets and the primarily ethical elegists. The fragments of Alcaeus, Anacreon, Archilochus, Sappho, Tyrtaeus, and others; selected Homeric hymns.

172. Pindar. (4) II.**Mr. Young**

Reading, interpretation, metrical study, and textual criticism. Introduction to other choral poets.

173. Hellenistic Poets. (4) III.**Mr. Bennett**

Introduction to the poetry of the Alexandrian period, such as that by Apollonius Rhodius, Callimachus, and Theocritus.

199. Independent Studies in Greek.

(1-5) I, II, III.

The Staff

199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses**241A-Z. Seminar in Greek Literature.**

(4) I, II, III.

The Staff

Prerequisite: Classics 201 or permission of instructor.

Intensive study and research in a Greek author or genre. Author varies. Course number may be repeated, but not letter.

596AA-ZZ. Directed Reading and Research.

(2-4) I, II, III.

The Staff

Prerequisite: Written proposal, approved by Department chairman and filed with Graduate Division. Individual Tutorial.

598AA-ZZ. Master's Thesis Research and**Preparation. (1-4) I, II, III.****The Staff**

Prerequisites: Permission of instructor and graduate adviser.

Independent Research. No unit credit toward degree.

LATIN**Lower Division Courses****1. Elementary Latin. (4) I, II, III.****The Staff****2. Elementary Latin (continuation of 1). (4)**

I, II, III.

The Staff

Prerequisite: Latin 1 or equivalent.

3. Intermediate Latin. (4) I, II, III.**The Staff**

Prerequisite: Latin 2 or equivalent.

Review of forms and syntax, and reading of Roman prose writers.

4. Accidence and syntax. (1) I, II, III.**The Staff**

Prerequisite: Latin 3 or equivalent.

Systematic study of declensions and conjugations; peculiarities of syntax. No reading. May be taken concurrently with courses for which it is prerequisite; an A or B grade in Latin 3 will be considered the equivalent of Latin 4 where the latter is a prerequisite.

* Not to be given 1973-74.

11. Intensive Elementary Latin. (4) I.**The Staff**

Primarily for graduate students. Latin 11 covers the same ground as Latin 1-2, but at a far more rigorous pace.

Upper Division Courses

Latin 105 or Latin 106 is equivalent to quarter course 5 for fulfillment of the General Education requirement in Foreign Language.

105. Introduction to prose: Cicero and**Caesar. (4) II.****The Staff**

Prerequisite: Latin 4 or equivalent.

Advanced reading and syntactical analysis. Background of Latin prose development. Latin 105 is equivalent to language 5 in the Foreign Language requirement.

106. Introduction to Poetry: Ovid. (4) I, III.**The Staff**

Prerequisite: Latin 4 or equivalent.

Grammar and metrics of Latin poetry. Latin 106 is equivalent to language 5 in the Foreign Language requirement. Latin 105 and 106 or their equivalent are prerequisite to all higher language courses in Latin.

***110A-B-C. Latin Prose Composition.**

(1-1-1) Yr.

The Staff

Advanced grammar, sight reading, and extended prose composition.

111. Roman Epic. (4) I.*The Staff**

Backgrounds. Vergil. Introduction to later epic poets, such as Lucan and Statius.

112. Roman Elegy. (4) II.*Mr. Bennett**

Reading and study of Propertius and other elegists.

113. Roman Satire. (4) III.*Mr. Bennett**

Horace, Juvenal, Persius, and their antecedents.

115. Roman Comedy. (4) I.**Mr. Bennett**

Plautus and Terence. Reading of complete plays and study of the origins of Roman Comedy.

116. Cicero: Essays and Letters. (4) II.**Mr. Jordan**

The private Cicero. Philosophical and oratorical works and correspondence.

117. Prose of the Empire. (4) III.**Mr. Margon**

Study and reading selected from such authors as Seneca, Petronius, Quintilian, and Pliny.

121. Sallust. (4) I.*Mr. Bennett**

Reading and philological study.

122. Livy. (4) II.*The Staff**

Study of the structure and Latinity of Livy. Extensive reading.

*123. Tacitus. (4) III. The Staff
Reading in the major works. Study of Tacitean style and models.

131. Poets of the Roman Republic. (4) I. Mr. Athanassakis
Principally Ennius, Lucretius, and Catullus.

132. Augustan Poets. (4) II. Mr. Bennett
Horace: *Odes and Epodes*. Vergil's *Eclogues* and *Georgics*.

133. Post-Augustan Poets. (4) III. The Staff
Readings in lyric poetry from the early empire to and including the late classical period.

199. Independent Studies in Latin. (1-5) The Staff
I, II, III.
199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

COLLEGE OF CREATIVE STUDIES

David K. Barton, M.A., *Lecturer in Music*.

David Cannell, Ph.D., *Assistant Professor of Physics*.

Robert H. DeWolfe, Ph.D., *Professor of Chemistry*.

Edward E. Dron, M.F.A., *Lecturer in Art*.

Peter Racine Fricker, F.R.C.O., *Professor of Music (and Chairman, Department of Music, UCSB)*.

Gerard Haggerty, M.F.A., *Lecturer in Art*.

John H. Kennedy, Ph.D., *Associate Professor of Chemistry*.

Bernard Kirtman, Ph.D., *Professor of Chemistry*.

Stanley D. Krebs, Ph.D., *Associate Professor of Music*.

Marvin Mudrick, Ph.D., *Professor of English (and Provost, College of Creative Studies)*.

Stanton Peale, Ph.D., *Associate Professor of Physics*.

Hank Pitcher, B.A., *Lecturer in Art*.

Ian K. Ross, Ph.D., *Associate Professor of Biology*.

Max N. Schott, M.A., *Lecturer in English*.

Logan H. Speirs, M.A., *Associate Professor of English*.

Alan Stephens, Ph.D., *Professor of English*.

^{2,3}Beatrice M. Sweeney, Ph.D., *Professor of Biology*.

David M. Trowbridge, M.A., *Lecturer in Art*.

Max L. Weiss, Ph.D., *Professor of Mathematics (and Associate Provost, College of Creative Studies)*.

Adrian M. Wenner, Ph.D., *Associate Professor of Biology*.

Enrollment in any course in the College of Creative Studies requires the consent of the instructor. Each course in the College may be taken as often as once per quarter.

GENERAL STUDIES

CS10. Group Interdisciplinary Studies.
(1-6) I, II, III. The Staff
Group studies in an interdisciplinary area, supervised by a member of the faculty of the College of Creative Studies.

ART

CS1. Drawing and Painting. (1-6) I, II, III. The Staff

Graduate Courses

221A-Z. Seminar in Latin Literature.

(4) I, II, III. The Staff
Prerequisite: Classics 201 or permission of instructor.

Intensive study and research in a Latin author or genre. Author varies. Course number may be repeated, but not letter.

596AA-ZZ. Directed Reading and Research.

(2-4) I, II, III. The Staff
Prerequisite: Written proposal, approved by Department chairman and filed with Graduate Division. Individual Tutorial.

598AA-598ZZ. Master's Thesis Research and Preparation. (1-4) I, II, III. The Staff

Prerequisites: Permission of instructor and graduate adviser.

Independent Research. No unit credit toward degree.

CS2. Themes. (1-6) I, II, III. The Staff
Drawing and painting in sequences, and according to themes.

CS3. Murals. (1-6) I, II, III. The Staff

CS4. Prints. (1-6) I, II, III. The Staff
Classical graphic media (e.g., etching and lithography) and modern technological media (e.g., photo-engraving and offset-lithography).

² Not to be given in 1973-1974.

² Absent on Leave Winter 1974.

³ Absent on Leave Spring 1974.

CS10. Graphic Study of the History of Graphic Ideas: Drawing. (1-6) I, II, III.

The Staff

The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art 10 emphasizes drawing.

CS11. Graphic Study of the History of Graphic Ideas: Painting. (1-6) I, II, III.

The Staff

The surviving works of art from the Paleolithic period until now constitute an existing order that may be considered the proper material for study by aspiring draughtsmen and painters. Art 11 emphasizes painting.

CS15. Student-Conducted Seminar. (1-6)

I, II, III.

The Staff

The student, having prepared material which his adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by his adviser. Students taking the course will receive credit for Art CS1, and their work will be graded by the adviser in consultation with the student instructor.

CS20. Sculpture. (1-6) II, III.

The Staff

CS21. Bronze Casting. (1-6) I, II,

III.

The Staff

Studies in bronze casting, with special emphasis on the lost-wax process.

CS50. Elements of Film-making. (1-6)

I, II, III.

The Staff

Introduction to theory and technique of film-making.

BIOLOGY

CS1. Models and Experiments. (1-6) I, II, III.

The Staff

Interplay between models and experimentation in the development of an understanding of the principles of biology.

CS2. Laboratory Project. (1-6) I, II, III.

The Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS3. Reading Project. (1-6) I, II, III.

The Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS10. Student-Conducted Seminar. (1-6)

I, II, III.

The Staff

The student, having prepared material which his adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by his ad-

viser. Students taking the course will receive credit for Biology CS1, and their work will be graded by the adviser in consultation with the student instructor.

CHEMISTRY

CS1. Major Unsolved Problems. (1-6) I, II, III.

The Staff

Study of some of the major unsolved problems in chemistry, with the aim of developing general experimental and theoretical approaches to these problems.

CS2. Project. (1-6) I, II, III.

The Staff

Investigation of a specific problem in chemistry. Set up in consultation with the instructor, and concluding with the student's report of progress.

CS3. Seminar. (1-6) I, II, III.

The Staff

Presentation and critical discussion of reports on original projects.

CS10. Student-Conducted Seminar. (1-6)

I, II, III.

The Staff

The student, having prepared material which his adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by his adviser. Students taking the course will receive credit for Chemistry CS1, and their work will be graded by the adviser in consultation with the student instructor.

LITERATURE

CS1. Writing: Verse. (1-6) I, II, III.

The Staff

CS2. Writing: Narrative Prose. (1-6) I, II,

III.

The Staff

CS3. Writing: Expository Prose. (1-6) I, II,

III.

The Staff

CS10. Genres. (1-6) I, II, III.

The Staff

CS11. Literary Structure: Chronological.

(1-6) I, II, III.

The Staff

Narrative.

CS12. Literary Structure: Non-Chronological. (1-6) I, II, III.

The Staff

Logical, analogical, cyclical, and repetitive schemes.

CS13. Subjects and Materials. (1-6) I, II, III.

The Staff

CS14. Themes and Motifs. (1-6) I, II, III.

The Staff

CS15. Student-Conducted Seminar. (1-6)

I, II, III.

The Staff

The student, having prepared material which his adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student

instructor will be supervised and graded by his adviser. Students taking the course will receive credit for Literature CS13, and their work will be graded by the adviser in consultation with the student instructor.

MATHEMATICS

CS1. Problem Solving. (1-6) I, II, III.

The Staff

Discussion and solution of non-routine mathematical problems.

CS2. Project. (1-6) I, II, III.

The Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS3. Modern Algebra. (1-6) III.

The Staff

Groups; modules; vector spaces; algebras; metric structures on vector spaces; representation theory; multilinear algebra; graded structures; universal properties; a survey of important algebraic structures.

CS10. Student-Conducted Seminar. (1-6) I, II, III.

The Staff

The student, having prepared material which his adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by his adviser. Students taking the course will receive credit for Mathematics CS1, and their work will be graded by the adviser in consultation with the student instructor.

CS20. Special Topics. (1-6) I, II, III.

The Staff

MUSIC

CS1. Composition. (1-6) I, II, III.

The Staff

CS2. Analysis: Materials. (1-6) I, II, III.

The Staff

CS3. Analysis: Forms. (1-6) I, II, III.

The Staff

CS4. Aural Disciplines. (1-6) I, II, III.

The Staff

CS5. Special Topics. (1-6) I, II, III.

The Staff

CS15. Student Conducted Seminar. (1-6)

I, II, III.

The Staff

The student, having prepared material which his adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by his adviser. Students taking the course will receive credit for Music CS1, and their work will be graded by the adviser in consultation with the student instructor.

PHYSICS

CS1. Seminar. (1-6) I, II, III.

The Staff

Group study, with regular reports delivered by students on subjects assigned and directed by the instructor.

CS2. Laboratory Project. (1-6) I, II, III.

The Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS3. Reading Project. (1-6) I, II, III.

The Staff

Set up by the student in consultation with the instructor, and concluding with the student's report of progress.

CS10. Student-Conducted Seminar. (1-6)

I, II, III.

The Staff

The student, having prepared material which his adviser judges adequate in depth and significance, delivers it as a quarter course to other students concentrating in the same field of study. The student instructor will be supervised and graded by his adviser. Students taking the course will receive credit for Physics CS1, and their work will be graded by the adviser in consultation with the student instructor.

COMPARATIVE LITERATURE PROGRAM

Stuart Atkins, Ph.D., *Professor of Germanic and Slavic Languages.*

Howard Clarke, Ph.D., *Professor of Classics and Comparative Literature.*

Genevieve Delattre, Ph.D., *Professor of French.*

Richard Exner, Ph.D., *Professor of Germanic and Slavic Languages.*

William Frost, Ph.D., *Professor of English.*

Edmond Masson, Ph.D., *Professor of French and Italian.*

Jorge de Sena, Ph.D., *Professor of Portuguese and Comparative Literature (Chairman of Committee).*

Anne Lehman, Ph.D., *Assistant Professor of English.*

Joseph Margon, Ph.D., *Associate Professor of Classics.*

Roberto de Souza, P.L., *Assistant Professor of Spanish.*

A program in Comparative Literature initiated in 1969-70 offers undergraduate level instruction through the cooperation of the departments of languages and literatures. An

* Absent on leave 1973-74.

undergraduate major is available along with programs leading to the Master of Arts and the Doctor of Philosophy. The program is presently under the direction of the Dean of the College of Letters and Science and is administered by a Chairman and an Advisory Committee representing the departments of Classics, English, French and Italian, German and Slavic Languages and Literatures, and Spanish and Portuguese.

Comparative Literature is the study of literature without regard for national or linguistic boundaries. It is comparative in that it deals with the interrelationships between different literatures through time and space. The comparatist may also concern himself with the masterworks of world literature, with literary trends and influences (e.g., the Classical Tradition), with the history and theory of literary criticism, or with periods (e.g., Medieval Literature, Mannerism and Baroque), literary movements (e.g., Symbolism), themes (e.g., the Faust legend), and genres (e.g., the novel).

PREPARATION FOR THE MAJOR

Students intending to concentrate in Comparative Literature must first complete the normal preparation requirements for the major in two departments of literature.

THE MAJOR

The major in Comparative Literature requires forty (40) units of upper division course work in two national literatures, one which may be English, in their original languages. Twenty of these units must be in the student's primary literature, sixteen (16) in his secondary literature. Majors must also take one four-unit course, Comparative Literature 100 (Introduction to Comparative Literature), normally in their senior year. It is the responsibility of the student and his adviser on the Comparative Literature Advisory Committee to insure by appropriate electives that his overall program is comparative in nature.

THE DEGREE OF MASTER OF ARTS

In addition to fulfilling the general requirements for admission to graduate status, the applicant should have an undergraduate major in Comparative Literature or its equivalent, i.e., a major and a strong minor in two literatures, one of which may be English, with some course work in Greek or Latin or classics in translation. Other students may be admitted if they demonstrate proficiency in their major and minor languages, but they will be required to make up any deficiencies in their undergraduate training, in addition to the regular course work for the M.A. degree.

Decisions regarding admission will be made by the Comparative Literature Advisory Committee within the general guidelines set by the graduate school. Upon admission, an M.A. student will have as his advisory committee the Program Director and those members of the Comparative Literature Advisory Committee who represent his major and minor languages.

The M.A. degree in Comparative Literature requires the study of two literatures, one of which may be English, in their original languages. It is available only under Plan II (36 units without thesis.). Approximately two thirds of the units should be in the major literature, one third in the minor, and more than half of all units must be in graduate courses.

One Comparative Literature course is required: CL 200 (Seminar in Comparative Literature). This course may be counted toward the major requirement.

The candidate must also demonstrate a reading knowledge of one of the following languages: French, German, Latin, Greek, or, with the consent of his advisers, whatever other language is relevant to, but not part of, his program. The form and content of this examination will be determined by the candidate's advisory committee.

The candidate must pass a comprehensive written examination on his major and minor literatures. This examination will be set by his advisory committee.

THE DEGREE OF DOCTOR OF PHILOSOPHY

In addition to fulfilling the general requirements for admission to graduate status, the student must meet the requirements of the Comparative Literature Program. If he comes with an M.A. from another university, he must satisfy the Committee, normally by examination, that he has the literary background and linguistic resources for doctoral work in Comparative Literature. He should begin making up any course deficiencies during his first quarter of residence.

Decisions regarding admission will be made by the Comparative Literature Advisory Committee within the general guidelines set by the graduate school. Upon admission, the student will have as his committee the Program Director and those members of the Comparative Literature Advisory Committee who represent his major and minor languages.

The Ph.D. degree in Comparative Literature requires the study of three literatures in their original languages, one major and two minors. One of these literatures may be English. The major will ordinarily entail the mastery of one literature in its full historical development. The minors may, with the approval of the student's advisers, be limited to the most important works of one literature, or to the influence of the minor literature on the major (e.g., Greek on German), or to one period (e.g., English Renaissance), topic (e.g., ancient literary criticism), or genre (e.g., the Russian novel). Consequently, the student who in his first year follows the course of study leading to the M.A. degree under Plan II should expect to extend his course work to include a second minor in literature.

The student must also demonstrate a reading knowledge of one of the following languages: French, German, Latin, Greek, or, with the consent of his adviser, whatever other language is relevant to, but not part of, his program. The form and content of this examination will be determined by the candidate's advisory committee.

Upon completion of his course work, the student will take three written examinations on his major and minor literatures. The written examinations will be followed by an oral examination administered by a doctoral committee appointed by the Comparative Literature Advisory Committee.

Upon passing the qualifying examination, the student will be advanced to candidacy. He will then consult with a member of the graduate faculty concerning a dissertation topic. After the topic and research plan have been approved by the doctoral committee, a dissertation director will be appointed by the Director of the Program, and the student will write his dissertation. Upon its completion and acceptance he will be questioned on it in an oral examination.

TEACHING CREDENTIALS

A major in Comparative Literature may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. Students should include in their programs the specific courses required by the departments of their primary and secondary literatures.

Upper Division Courses

100. Introduction to Comparative Literature.

(4) I, II, III. Mr. Clarke, Mr. Sena
Prerequisite: Reading knowledge of one foreign language.

Method and practice of comparative study. May be repeated for credit with permission of instructor and Program Chairman and assignment of special material.

105. The Classical Tradition. (4) III.

The Staff
Prerequisite: Reading knowledge of relevant foreign language.

Studies in the post-classical of Graeco-Roman literature and mythology. Nea-classicism; Classical influences on western literature; Myth and literature.

110A-B. Mannerism and Baroque.

(4-4) II, III.

Mr. Sena

Prerequisite: Reading knowledge of relevant foreign language.

A comparative approach to literature and its historical and philosophical background in the sixteenth and seventeenth centuries, with some attention to philosophy, music and the visual arts. Selected readings from French, Spanish, Portuguese, Italian, German and English writers of the period.

Either quarter may be elected separately.

115. The Bildungsroman, (4) II. The Staff

Prerequisite: Reading knowledge of French or German.

A comparative study of the "novel of education" in French, German and English literature. Readings

from Rousseau, Stendhal, Flaubert, Goethe, Keller, James and Joyce.

120. Medieval Literature. (4) II. The Staff
Prerequisite: Reading knowledge of relevant foreign language. The course may be repeated for credit, if the content changes with the instructor.

Studies in the popular, courtly, religious and heroic traditions of western European literature and drama from the end of classical antiquity to the beginning of the Renaissance. The origin, development and transmission of characteristic themes.

199. Independent Studies. (1-5) I, II, III.
The Staff

Graduate Course

200. Seminar in Comparative Literature.

(4) I, II, III. Mr. Clarke, Mr. Sena
Bibliography and problems of comparative literary study.

596. Directed Reading and Research. (2-18)
I, II, III. The Staff

Individual tutorial. A written proposal for each tutorial must be approved by the Program Chairman and filed with the Graduate Division. Minimum 2 units per quarter. No more than half of units required for M.A. may be taken in 596 series. Letter grade only.

COMPUTER SCIENCE

Committee in Charge:

C. Douglas Johnson, Ph.D., *Assistant Professor of Linguistics.*

Robert H. McGuckin, Ph.D., *Assistant Professor of Economics.*

William E. Palke, Ph.D., *Assistant Professor of Chemistry.*

Leon Presser, Ph.D., *Assistant Professor of Electrical Engineering.*

Stephen Simons, Ph.D., *Associate Professor of Mathematics (Chairman).*

John Sonquist, Ph.D., *Professor of Sociology.*

David Sprecher, Ph.D., *Professor of Mathematics.*

Roger Wood, Ph.D., *Associate Professor of Electrical Engineering.*

This interdepartmental major, leading to the degree Bachelor of Arts in Computer Science, is designed for students who wish to emphasize studies in information systems and in the operation and use of computers. Students have the opportunity, in various courses, to gain both conventional and interactive on-line programming experience on a large IBM System 360 Model 75 computer located on campus, and to have network access to special computer facilities located in other parts of the country. Smaller computers are also available on campus.

The Computer Science major is a multidisciplinary program of The College of Letters and Science in cooperation with The College of Engineering, administered this year through the Mathematics Department. The major is guided by an advisory committee (members listed above) representing the various disciplines which contribute to and make use of computer science.

PREPARATION FOR THE MAJOR

The following courses constitute the preparation for the major:

Mathematics 3A-B-C

Mathematics 4A-B or 5A-B-C

Mathematics 9

Electrical Engineering 5 or Engineering 3A-B or Mathematics 6

THE MAJOR

The required courses for the major are these:

Electrical Engineering 105, 154, 165A, 165B or 152A, and 173

Mathematics 104A-104AL, 120A, 136, 137, and 104B-104BL or 104C-104CL

Sociology 111

Students are strongly encouraged to use their remaining electives to acquire a deeper knowledge in some computer related field. Some electives which may be of particular interest to Computer Science Majors are:

Biology 136A-AL-B-BL

Economics 141A-B-C

Electrical Engineering 130A-B-C, 150, 151, 152A-B, 158A-B-C, 165B-C

Geography 101, 115A-B, 118

Linguistics 115, 110A-B

Mathematics 108A-B, 116, 119A-B-C, 120B-C, 122A-B, 132, 134A-B-C, 135A-B-C, 138

Mechanical Engineering 157, 175

Physics 127A-B-C

Political Science 107, 190A, B, M, N

Sociology 43, 103, 106, 109A-B, 110

ADVISERS

Each student will be assigned an adviser chosen from the appropriate department, according to the student's emphasis and interest in computer science. The student will need to consult his adviser about the program and training best suited for his goals. Information concerning advisers and other aspects of the major may be obtained from the Mathematics Department office.

RELATED MAJORS

The Electrical Engineering and the Mathematics Departments have computer related majors available. The interested student should consult the catalogue listing of these departments. A Graduate program in computer science is also offered by the department of Electrical Engineering.

DANCE

Rona Sande, M.Ed., *Associate Professor of Dance (Director)*.

Patricia Sparrow, Ph.D., *Associate Professor of Dance*.



Cristyne Lawson, *Visiting Assistant Professor of Dance*.

Isa Partsch Bergsohn, *Lecturer in Dance*.

Emma Lou O'Brien, *Lecturer in Dance*.

THE MAJOR

The major in Dance offers the opportunity for an area of emphasis within a liberal arts education, or for preparation in professional work. Course offerings are geared to include the theoretical and technical aspects of dance, as well as a breadth of experience in related arts and sciences. Students who are interested in securing teaching credentials should confer with the Director of Dance regarding the completion of additional requirements.

Requirements for the Major

For completion of the Bachelor of Arts degree in Dance the student must complete 180 units of University work, including all requirements as outlined by the College of Letters and Science and the major course as outlined below. Technical ability and theoretical knowledge must be demonstrated to the satisfaction of the Dance faculty before entrance to upper division dance study.

Specific courses from the General Education sequence which are required for the Dance major are as follows: Art 1, or 150, Zoology 25 & 25L or 40 & 40L, Music 15.

Preparation for the major (Lower Division): Dance 43, 46A-B-C-D-E-F, 47D-E-F, Dramatic Art 5, 23, 60.

The Major (Upper Division): Dance 145A-B, 149, 151A-B-C, 152A-B, 153, 154, 156A-B-C-D-E-F, 157; 2 units elected from the following: Dance 148, 149, 155, 158, 160, 161, 199; Dramatic Art 151A, 126, 149.

It is recommended that the entering student contact the Dance faculty for program planning advice before enrolling, in order to insure the best possible sequence of study.

DANCE

Lower Division Courses

43. Rhythmic Form and Analysis. (2) I.

Mrs. O'Brien

Analysis of the temporal element of movement with exploration of rhythmic devices in dance composition.

44. Fundamentals of Movement Technique.

(1) I, II, III.

Mrs. Bergsohn

An introduction to movement as an expressive medium.

45. History and Appreciation of Dance. (3)

I, II, III.

Mrs. Bergsohn, Miss Sande, Miss Sparrow

Introduction to dance as an art form. A study of the historical periods of dance in close relationship to the other forms of cultural expression.

46A-B-C-D-E-F. Modern Dance. (2 ea.)

I, II, III.

Mrs. Bergsohn

Analysis and exploration of movement as an expressive medium.

47A-B-C. Elementary Ballet.

(2-2) I, II, III.

Miss Lawson

Analysis and exploration of technical and expressive elements of the ballet.

47D-E-F. Intermediate Ballet.

(2-2-2) I, II, III.

Miss Lawson

Prerequisite: Dance 47C or audition by dance faculty.

Further analysis and exploration of technical and expressive elements of ballet.

Upper Division Courses

145A. The Historical Development of Dance.

(4) I, SS.

Mrs. Bergsohn

Prerequisite: Upper Division standing or consent of instructor.

The study of dance as a reflection of cultural history. The history of theatrical dance from the Renaissance through the 19th century.

145B. The Historical Development of Dance.

(4) II, SS.

Mrs. Bergsohn

Prerequisite: Upper Division standing or consent of instructor.

The study of dance as a reflection of cultural history. The dance in the 20th century.

148. Summer Dance Repertory. (1-6) SS.

Mrs. Bergsohn

Prerequisite: Consent of instructor after audition. A repertory dance theatre laboratory; the study of contemporary choreographic works culminating in a concert. May be repeated for up to 12 units of credit.

149. Dance Workshop. (1-4) I, II, III.

The Staff

Prerequisite: Consent of instructor.

Projects in performance, production, choreography

and directing. May be repeated for credit. (Will not count as upper division units for the major when taken by Freshmen and Sophomores.)

151A-B-C. Choreography. (3-3-3) I, II, III.

Miss Sparrow

Prerequisites: Dance 46C and Upper Division standing.

Analysis of the elements of choreographic form; styles and trends with experience in development of dance studies; theory and technique of advanced group choreography.

152A-B. Labanotation. (3-3) I, II.

Mrs. O'Brien

Study of the elements of dance notation and interpretation of movement through reading and writing of the dance score.

153. Ethnic Dance Forms. (3) II.

Miss Lawson

Prerequisites: Dance 46C or 47C and Upper Division standing.

A survey of predominant cultural dance forms.

154. Accompaniment for Dance. (3) III.

Mrs. O'Brien

Prerequisite: Dance 43.

Study in accompaniment for dance, including music sources, improvisation, percussion and sound experimentation.

155. Organization of Dance Production.

(3) II.

Miss Sparrow

Prerequisite: Consent of instructor.

Theory and techniques of organization, direction and production of the public dance performance.

156A-B-C-D-E-F. Advanced Modern

Dance. (2-2-2) I, II, III.

Miss Sande

Prerequisite: Dance 46F.

Advanced analysis and exploration of dance as an expressive medium.

157. Criticism and Analysis. (3) III.

Miss Sande

Prerequisite: Consent of instructor.

Advanced analysis of choreographic works with practical application in viewing, reviewing and criticism.

158. Theory of Dance. (3) I.

Miss Sparrow

Prerequisites: 46F, 151A.

History and theory of dance. An examination and analysis of the literature and materials of dance with practical study in the leading of group movement experiences.

160. Dance Repertory. (2) I, II, III.

Miss Sparrow

Prerequisite: Dance 156A or consent of instructor.

The study and performance of major choreographic works. May be repeated up to 12 units of credit.

161. Jazz and Theatre Forms. (2) III.

Miss Lawson

Prerequisite: Dance 46C or 47C.

Jazz as an expressive idiom and dance utilized in theatrical and music productions.

198. Group Studies in Dance (1-4) I, II, III.

The Staff

Prerequisites: Consent of instructor and department. Group projects in selected areas of emphasis. Enrollment normally limited to 12 or fewer students.

199. Independent Study in Dance.

(1-5) I, II, III.

The Staff

Prerequisites: Consent of instructor and department.

Projects in choreography or dance research. 199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Related Courses in Another Department Education

390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Dance. (3) I, II.

Miss Sparrow

Prerequisite: Major or minor in dance and consent of Instructor.

A study of the basic principles of teaching dance; includes an examination and analysis of the literature and materials of dance education.

392A-B-C. Student Teaching in Dance.

(4-4-4) I, II, III.

Miss Sparrow

Prerequisite: Admission to credential program.

393. Problems Seminar in the Teaching of Dance. (1) I, II, III.

Miss Sparrow

Prerequisite: Concurrent enrollment in Ed. Dance 392 series.

 DRAMATIC ART

*Stanley L. Glenn, Ph.D., *Professor of Dramatic Art.*

Theodore W. Hatlen, Ph.D., *Professor of Dramatic Art.*

*William R. Reardon, Ph.D., *Professor of Dramatic Art (Chairman of the Department).*

*Lucille H. Woolsey, Ph.D., *Associate Professor of Dramatic Art.*

John D. Harrop, Ph.D., *Assistant Professor of Dramatic Art.*

Brian P. Johnston, M.A., *Assistant Professor of Dramatic Art.*

Vincent A. Landro, M.F.A., *Acting Assistant Professor.*

*Robert D. Morgan, M.F.A., *Assistant Professor of Dramatic Art.*

Nancy S. Reinhardt, Ph.D., *Acting Assistant Professor.*

Donald J. Childs, M.A., *Lecturer in Dramatic Art.*

Robert Potter, Ph.D., *Lecturer in Dramatic Art.*

Leland K. Strasburg, M.F.A., *Lecturer in Dramatic Art.*



THE MAJOR

The major in Dramatic Art provides a liberal arts education and preparation for professional or educational work in the theater. The study of dramatic literature and theater history is balanced by studio courses and participation in dramatic production in the campus theaters. The major may lead to graduate work and prepare the student for a teaching credential. The Department of Dramatic Art reserves the privilege of determining the students who will be accepted and who will continue in the Department on the basis of academic achievement and participation in the production program.

Requirements for the Major

Students must meet the General Education requirements as outlined in this catalog. Following are listed specific elective courses in the General Education sequence which are required for the Dramatic Art major:

English 117A, 2 courses from American History and Institutions, Psychology 1 or 101, History 4A-B-C, and 2 courses from Art 1 or 150, Dance 45 or Dance 145A or 145B, or Music 15.

¹ On Leave Fall 1973.

² Absent on Leave Winter 1974.

³ Absent on Leave Spring 1974.

⁴ On Leave Academic Year 1973-74.

All Dramatic Art majors must complete the required core courses *in the following sequence*: First year: Dramatic Art 5, and 60; First or second year: 20, 21D-E, and 24D; Third year: 3 courses from the Dramatic Art 160 series; Fourth year: 3 courses from the Dramatic Art 160 series; Dramatic Art 153A,B (except Directing emphasis); 3 units from Dramatic Art 149 may be taken anytime during the Junior and Senior years.*

The following areas of emphasis are offered: Acting, Directing, Design and Technical Theater, and a Tutorial Liberal Arts Program. The courses in your emphasis must be worked out with your Department Adviser upon entrance. Final declaration of the emphasis and approval by the Department Adviser must be made by the beginning of the Junior year.

EMPHASIS PROGRAMS

Acting

Dramatic Art 11A-B-C (3); 12 (3); 15A-B-C (9); 26 (1); 111A-B-C (3); 151A-B-C (9); 152C (2); 153E; 8 units of related courses worked out with adviser; Physical Activities 1-18A-B, or C (½).

Directing

Dramatic Art 15A (3); 22 (3); 23 (3); 151A-B-C (9); 153C-D (6); 8 units of related courses worked out with adviser; Physical Activities 1-18A-B, or C (½).

Design and Technical Theater

Dramatic Art 22 (3); 23 (3); 25 (3); 27 (3); 121 (4) or 125 (3); 126 (4); 128 (3); 8 units of related courses worked out with adviser.

Tutorial Liberal Arts Program

Individual programs of study in the areas of Dramatic Literature, Playwriting, Dramatic Theory and Criticism, or Interdisciplinary Studies in Drama (Social Sciences, Philosophy, Arts, etc.). Work with faculty adviser in designing an approved program (28 to 35 units).

THE GRADUATE PROGRAM

THE DEGREE OF MASTER OF ARTS

Requirements

1. In addition to the general requirements for admission to graduate status, the applicant must satisfy the following departmental requirements.
2. Departmental requirements:
 - a. 36 units required of which at least 21 units must be from graduate courses 200 and above.
 - b. Required distribution: (1) Research methods, 3 units of DA 200; research and production project, 6 units of DA 598AA-ZZ; (2) Literature, Theory, and History, 15 units from DA 103, 160A-160F, 162, 210A-210E, 272A-272G, 294 sequences of which at least 6 units must be above 200; (3) Theatre Arts, 12 units from 101A, 101B, 102, 104A, 104B, 110, 115, 121, 122, 123, 125, 126, 127, 128, 130, 151A-151C, 153A-153D, 235A-235C of which a minimum of 6 units must be from 235 sequence with at least 3 units from 235C.
 - c. Oral examination of 1½ hours on materials covered in course of study and on research or production project.
3. Only students who have clearly revealed their scholarly and creative ability will be permitted to undertake doctoral work. The faculty will make this decision at the conclusion of the M.A. program.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. General requirements for admission to graduate status must be fulfilled.

* All Dramatic Art majors must demonstrate a proficiency in both costume and tech construction either by course work or examination.

2. Departmental requirements:

- a. During the first year the candidate will pursue a course of study leading to the M.A. degree. A student entering from another institution with an M.A. awarded without thesis or research investigation may be required to demonstrate research proficiency before proceeding with the doctoral program. A similar demonstration may be required for appropriate theatre areas.
- b. During the second year the candidate will complete his language requirements and prepare for his comprehensive examination. There are three options for fulfillment of the language requirement. Option 1: Two languages at a reading level (ETS Graduate Foreign Language Tests). One language must be French, German, or Russian. Option 2: Any foreign language needed for doctoral research may be pursued to a level of oral and written proficiency. Such proficiency will be attested by the appropriate foreign language department which will administer the test. Option 3: A student may elect not to offer a language but to offer instead a series of breadth or depth courses effectively tailored to his individual needs by the Graduate Adviser and approved by the Graduate Division. No dissertation utilizing materials in another language would be possible under Option 3.
- c. Normally a heavy sequence of courses in dramatic literature will be taken. The candidate must pass departmental written examinations in dramatic literature, dramatic theory and criticism, history of the theatre, history and theory of acting and directing, and his special area of interest. Having passed these examinations, he will be permitted to take his comprehensive examination and will be recommended for advancement to candidacy upon successful completion.
- d. The third year will normally be spent in the research, writing, and oral defense of his dissertation. Approximately 30 units will be devoted to dissertation work.
- e. Doctoral candidates must have experience as a Teaching Assistant in Dramatic Art.

CREDENTIAL PROGRAMS

Either a major or minor in Dramatic Art may serve as an appropriate part of the program of studies required for a secondary or junior college teaching credential in California. A student intending to secure a credential should confer with designated counselors in the Department of Dramatic Art and in the Graduate School of Education.

5. Introduction to Acting. (3) I, II, III.

An introduction for majors and non-majors to the multiple problems of the actor's art and craft.

11A-B-C. Voice and Movement Laboratory. (1-1-1) I, II, III.

Assignments and exercises to improve and develop the actor's voice and body. Must be taken by those enrolled in Dramatic Art 15A, B, C (beginning acting). But may be taken independently without 15A, B, C with consent of instructor.

12. Fundamentals of Mime. (3)

Practical experience in traditional forms and experimental work in creative studies in mime.

15A. Fundamentals of Acting. (3) I.

Mr. Landro

Prerequisites: Dramatic Art 5 and consent of instructor.

Basic work in voice, movement, and improvisation to develop the beginning actor's understanding and artistic growth. Dramatic Art 11A *must* be taken in conjunction with this course.

15B. Fundamentals of Acting. (3) II.

Mr. Landro

Prerequisites: Dramatic Art 15A and consent of instructor.

Further development of the actor's skills with emphasis on scene analysis and presentation. Student must take 11B in conjunction with this course.

15C. Fundamentals of Acting. (3) III.

Mr. Landro

Prerequisites: Dramatic Art 15B and consent of instructor.

Problems in interpretation and characterization. Student must take 11C in conjunction with this course.

20. Technical Theatre Production. (3)

I, II, III. Mr. Childs, Mr. Strasburg

Survey of scenographic techniques including technical production, set and costume design.

21D-E. Production Laboratory—Tech.

(1-1) I, II, III. Mr. Childs, Mr. Strasburg

Prerequisite: Consent of instructor.

Practical application through crewing a production.

22. Scenic Design. (3) I

Mr. Strasburg

Prerequisites: D.A. 20, 21D & E, 27, and consent of instructor.

Projects in the interpretation of plays through scenic elements with concentration on the tools of

the designer, floor plans, renderings, models and elevations.

23. Stage Lighting Design. (3) II.

Mr. Strasburg

Prerequisites: D.A. 20, 21D & E, 22 and consent of instructor.

Lecture-demonstration in instrumentation, color in light, control equipment and basic lighting design theories. Practical application through laboratory assignments and participation in productions.

24A. Costume: Basic Sewing Techniques.

(1) I. Mr. Morgan

Examination and execution of fundamental construction techniques (seams, linings, interlinings, facings, closings, hand and finishing work, dyeing, painting, etc.) Accomplished seamstresses exempt by consent of the instructor.

24B. Costume: Basic Pattern Drafting, Cutting, and Fitting. (1) II. Mr. Morgan

Prerequisite: Consent of instructor.

Construction (in muslin) of contemporary and period garments and accessories from historical sources.

24D. Production Laboratory: Costume.

(1) I, II, III.

Prerequisite: Consent of instructor.

Construction of costumes and accessories for departmental productions.

25. Costume Design. (3) III.

Prerequisites: D.A. 27 and consent of instructor.

Exploration of basic elements of design (color, texture, line, mass, etc.) and rendering techniques in a series of weekly exercises related to specific dramatic literature texts.

26. The Art and Craft of Stage Makeup.

(1) I, III. Mr. Morgan, Mr. Strasburg

Prerequisite: Designed for the Dramatic Art major; consent of instructor.

The materials of makeup. Application of juvenile, character, and period makeup for the stage.

27. Theatre Graphics. (3) I. Mr. Morgan, Mr. Childs, Mr. Strasburg

Prerequisite: Consent of instructor.

Rendering techniques for scenic and costume design.

46. Introduction to Motion Pictures.

(4) I, II, III. Mrs. Reinhardt

Introduction to the study of film; analysis of motion picture types and styles: film imagery and syntax; study and discussion of important filmic works.

49. Theater Workshop. I, II, III. The Staff

Projects in acting and stagecraft.

May be repeated for two hours of credit.

60. The Understanding of Drama.

(4) I, II, III. Mrs. Reinhardt

The general nature of dramatic presentation, including elements of dramatic structure, types of drama, the contributions of the actor, director, designer, technician, and audience.

Upper Division Courses

101A. Children's Theatre. (2) I The Staff

Study of special techniques involved in producing plays for the Child Audience. Analytical survey of writing, staging, and acting for the Child Audience including Story Theatre, Reader's Theatre, and Creative Dramatics.

101B. Children's Theatre. (2) I. The Staff

Class to produce a Children's Play for public performance. Highest professional standards demanded in all aspects of production. 101B students must also be enrolled in 101A.

*102. History of the Theatre. (3) III.

Prerequisite: Dramatic Art 60 and/or consent of instructor.

The history of the playhouse, the practitioner and dramatic production from the Greeks to the present.

*103. Black Drama. (3) III.

Discussion of Black drama and theater in America treating the contribution and involvement of black artists in the drama and theater in this country.

104A. Playwriting: An Introductory Course.

(4) I. Mr. Potter

Exploration of ideas for the stage. Experiments with mime, monologue, dialogue, scene, Characters and action. Resources of the stage, principles of economy. Analysis of scripts on paper and in production. A series of written assignments, and a final project (scenes from a work in progress).

104B. Advanced Playwriting. (4) II.

Mr. Potter

Prerequisites: Completion of 104A (or submission of written Material) and consent of the instructor.

Description: Development of selected student projects into completed working scripts; further studies in script analysis. Writing and re-writing.

104C. Script Workshop (1-4) III.

Mr. Potter

Prerequisite: Consent of instructor.

Description: A. Playwriting Workshop. Rehearsal and production of selected student scripts, in collaboration with student actors, director, etc. B. Media Script Workshop. Radio, film and video projects.

*105A. Introduction to Chicano Theatre.

(3) I. Mr. Huerta

Prerequisite: Consent of instructor.

Description: Focusing on basic concepts and techniques of Chicano Teatro, this course will explore the historical development of the Teatro form and experiment with various modes of realizing the acting styles and production techniques of the Teatro. As heavy emphasis will be placed on the particular acting problems involved students are urged to enroll simultaneously in D.A. 5.

*105B. Development of Chicano Theatre.

(3) II.

Prerequisite: Consent of instructor.

Description: With an intensive concentration on the preparation of Chicano theatre material for presentation, this course will include the writing of Acts

* Not offered 1973-74.

and plays; the exploration of improvisational techniques; the development of "open-ended" scenarios; and the creation of effective scenic, mask, and costume techniques for Chicano theatre.

***105C. Chicano Theatre in Performance.**
(3) III.

Prerequisite: Consent of instructor.

Description: Utilizing the experience and materials created in D.A. 105A and B, a series of performance events will be moulded in four weeks of intensive rehearsal. The remainder of the quarter will be given to an extensive series of performances by the Teatro group, including presentations in schools, prisons, parks, community centers, and theatres.

110. Repertory Theatre. (1-6) I, II, III.

The Staff

Prerequisite: Consent of instructor.

Description: A repertory theater workshop emphasizing styles of acting culminating in production. Enrollment by audition only. May be repeated up to twelve hours of credit.

111A-B-C. Voice and Movement Laboratory. (1-1-1) I, II, III.

Assignments and exercises to improve and develop the actor's voice and body. Must be taken by those enrolled in Dramatic Art 151A, B, C. But may be taken without 151A, B, C, with consent of instructor.

115. Summer Repertory Theatre.

(1-6)S.S.

The Staff

Prerequisite: Consent of instructor.

Description: A summer repertory theatre workshop emphasizing styles of acting culminating in production. Enrollment by audition only. May be repeated up to 12 units of credit.

117. Theatre in England. (3) Summer.

Mr. Glenn

Designed to teach in depth and out of actual experience the relations between the scripts of great plays and the best available productions of these plays. Must be taken in conjunction with English 117A or B.

121. Advanced Technical Theater Production.

(4) I.

Mr. Childs

Prerequisites: D.A. 20, 21D, E and consent of instructor.

Description: Advanced problems in planning, drafting, construction, mounting and rigging of stage scenery.

122. Advanced Scenic Design. (4) II.

Mr. Strasburg

Prerequisites: D.A. 22 and consent of instructor.

Concentration on set design problems of various styles. Projects to include perspective sketches, elevations, and models.

123. Advanced Stage Lighting Design.

(4) III.

Mr. Childs, Mr. Strasburg

Prerequisites: D.A. 23 and consent of instructor.

Intensive work in lighting design plots with practical application of projects on stage.

125. Advanced Costume Design. (3) I.

Prerequisites: D.A. 25 and consent of instructor.

Execution of costume design for Greek or Eliza-

bethan text. Emphasis on conceptual bases and subsequent characterization.

***126. Visual Art for the Theater.** (4) I.

Mr. Strasburg, Mr. Morgan

Prerequisite: Consent of instructor.

A survey of design and ornament as it pertains to the theater. Includes period styles, architecture, costume and graphic arts.

127. Problems in Technical Theatre.

(4) I.

Mr. Childs, Mr. Strasburg

Prerequisite: Consent of instructor.

Description: Advanced technological research applied to special problems in theatrical design.

128. Advanced Production Design.

(3) I, II, III.

Technical Staff

Prerequisite: Consent of instructor.

Study of total production design to include projects in costume, set, and lighting design. Concentration on the concept of stylistic unity through the visual elements of dramatic production.

130. Special Studies in Design. (1) I, II, III.

The Staff

Prerequisite: Consent of instructor.

General course in technical theatre and design for upper division transfer students and graduates. May be repeated for four hours of credit.

146. Aesthetics of film. (4) II.

Mr. Sesonske

The nature of film; its relation to the other arts; film genres; elements of film criticism; description, interpretation and evaluation of film.

148. The History and Development of the

Motion Picture. (3) II.

Mr. Sesonske

Study of world cinema since 1890's. Development of film as an art form and as a cultural, economic, and social force.

149. Theater Workshop. (1) I, II, III.

Projects in acting and stagecraft.

May be repeated for four hours of credit.

151A. Advanced Acting: Tragic Style. (3) I.

Mr. Glenn

Prerequisites: D.A. 12 and 15C and consent of instructor.

Scenes and exercises re-examining the conventions of serious plays from selected periods of dramatic art. Students must take 111A in conjunction with this course.

151B. Advanced Acting: The Craft of

Comedy. (3) II.

Mr. Glenn

Prerequisites: D.A. 151A and consent of instructor.

Scenes and exercises in various modes of comic acting ranging from farce to high comedy. Dramatic Art 111B must be taken in conjunction with this course.

151C. Advanced Acting: Modern Trends.

(3) III.

Mr. Harrop

Prerequisites: Dramatic Art 151B and consent of instructor.

Study and performance of contemporary acting developments. Dramatic Art 111C must be taken with this course.

* Not offered 1973-74.

153A. Theory of Directing. (2-4) I.

Mr. Glenn

Prerequisite: Consent of instructor.

The director's initial approach to the play: research, textual study, and formal analysis.

153B. Techniques of Directing. (2) II.

Mr. Glenn

Prerequisites: D.A. 153A and consent of instructor.

Lectures and demonstrations of directorial skills in composition, movement and business.

153C. Techniques of Directing: Laboratory. (2) II.

Mr. Glenn

Prerequisites: D.A. 153A and consent of instructor.

Exercises and scenes employing directorial skills. May be taken only in conjunction with 153B.

153D. Projects in Directing. (4) III.

Mr. Glenn

Prerequisites: D.A. 153B, C and consent of instructor. Directing emphasis only.

Full directorial responsibility for the direction of a one-act play.

153E. Projects in Acting. (1-4) III.

Mr. Harrop

Prerequisites: D.A. 153C, consent of instructor. Acting emphasis only.

160A. Development of Dramatic Art. (4) I.

The Staff

A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from its origin in the Western World through the Greeks to the Roman Empire.

160B. Development of Dramatic Art. (4) II.

The Staff

A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from the Middle Ages to the Jacobean period, focussing upon the development of the Renaissance theater in England and Spain.

160C. Development of Dramatic Art. (4) III.

The Staff

A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from the Jacobean period through the development of Neo-Classicism in France and Restoration England.

160D. Development of Dramatic Art. (4) I.

The Staff

A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from 1700 to the rise of Realism, emphasizing the Romantic movement, Melodrama, and the emergence of the "well-made play."

160E. Development of Dramatic Art. (4) II.

The Staff

A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from Ibsen to the end of World War I, examining divergent trends in the Modern theater.

160F. Development of Dramatic Art. (4) III.

The Staff

A study of the drama as a manifestation of cultural development, in terms of dramatic structure, the evolving physical theater and artistic styles, and critical theory from the end of World War I to the present, treating various aspects of the Contemporary theater.

162. Shakespeare in Performance. (4) I.

Mr. Potter

A study of Shakespeare's plays as performed works of art. Two areas of concurrent emphasis in the course will be a) Elizabethan performance conditions and the stage history of Shakespeare's plays from the Seventeenth Century to the present; b) Shakespeare in modern performance; on stage, recordings, film and videotape.

190. Production Administration. (3) I, II, III.

Prerequisites: D.A. 20, 21D, E, D.A. 24D. Consent of instructor, and Department Chairman's approval.

Workshop for advanced student functioning as assistants to directors, designers, and technical directors. Portfolio, promptbook, or paper required. May be repeated up to six hours of credit.

194. Group Studies for Advanced Students, (1-4) I, II, III.

Prerequisites: Senior standing and consent of the Department Chairman.

Description: Intensive study, research, and project preparation. May be repeated up to eight hours credit. Enrollment normally limited to 12 or fewer students.

199. Independent Studies in Dramatic Art. (1-5) I, II, III.

The Staff

199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses**200. Introduction to Graduate Study in****Dramatic Art. (3) I.**

Mr. Reardon

Prerequisite: Graduate standing.

Discussion and utilization of various research techniques. Bibliographical work accentuated.

210A. Tragic Drama. (3) I.

Mr. Hatlen

Prerequisite: Graduate standing.

Tragic masterpieces from Greeks to the present.

210B. Comic Drama. (3) II.

Mr. Hatlen

Prerequisite: Graduate standing.

Comic masterpieces from Greeks to the present.

210C. Drama of Mixed Genres. (3) III.

Mr. Johnston

Prerequisite: Graduate standing.

Masterpieces of intermingled forms from Greeks to the present.

210D. American Theater and Drama to 1895.

(3) II. Mr. Reardon

Prerequisite: Graduate standing.
From origins of both to the rise of realism and the Theatrical Syndicate.

210E. American Theater and Drama from 1895. (3) III.

Mr. Reardon

Prerequisite: Graduate standing.
From the Theatrical Syndicate and the new art and drama movement to the present day.

235A. Advanced Problems in Directing.

(3) I, II, III. Mr. Harrop

Prerequisite: Graduate standing.
Discussion of advanced problems in directing; practical application and projects. May be repeated up to six hours credit.

235B. Advanced Problems in Design.

(3) I, II, III.

Prerequisite: Graduate standing.
Discussion of advanced problems in design; practical application and projects. May be repeated up to six hours credit.

235C. Advanced Problems in Theater Practice. (1-12) I, II, III.

The Staff

Prerequisite: Graduate standing.
Discussion of problems in repertory; practical application of specialized individual projects. A student may take no more than 6 units on the M.A. and no more than 6 units on the Ph.D.

255. Seminar in Film. (3) III.

Mr. Sesonske

Prerequisite: Dramatic Art 46 or Philosophy 136.
Elements of film and its critical vocabulary, studied through the examination of the work of a distinguished director. Typical topics would include: visual style, expressive movement in film, character, acting, symbolism, describing a film, reality and fantasy, photography.

272A. Seminar in Theories of Acting and Directing. (3) II.

The Staff

Prerequisite: Graduate standing.
Examination of the major theoretical works of the past and present on acting and directing.

272B. Seminar in Dramatic Theory: Aristotle to Lessing. (3) I.

Mr. Reardon, Mr. Hatlen

Prerequisite: Graduate standing.
Detailed study of theories from *The Poetics* to the *Hamburg Dramaturgy*.

272C. Seminar in Modern Dramatic Theory. (3) II.

Mr. Johnston

Prerequisite: Graduate standing.
Major theories and concepts from Lessing to Langer.

272D. Seminar in History of Physical Theater and Design. (3) II.

Mr. Hatlen

Prerequisite: Graduate standing.
Description: Examination of the physical theater and stage design from ancient Greece to the present.

272F. Seminar in Non-Western Drama and Theater. (3) III.

Mr. Hatlen

Prerequisite: Graduate standing.
Oriental and Indian styles in drama and theater.

272G. Seminar in Dramatic Literature and Theater History. (3) I, II, or III.

Staff

Prerequisite: graduate standing.
Varies in content from year to year.

294. Studies in Drama. (3) III.

The Staff

Prerequisite: Graduate standing.
Studies in Drama utilizing whenever possible visiting scholars and specialists in theatre and drama. Content variable. Will be offered irregularly.

596AA-ZZ. Directed Reading and Research.

(1-6) I, II, III.

The Staff

Prerequisite: Consent of instructor.
Individual tutorial. A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division. S/U grade may be given while in progress, but to be converted to letter grade on conclusion.

597AA-ZZ. Individual Study for Master's Comprehensive and Ph.D.

Examinations. (1-12) I, II, III. The Staff

Prerequisite: Consent of instructor.
No unit credit allowed toward advanced degree. S/U grade.

598AA-ZZ. Master's Project, Research and Creative. (1-6) I, II, III.

The Staff

Prerequisite: Consent of instructor.
May be taken for a maximum of six units. S/U grade.

599AA-ZZ. Dissertation Research and Preparation. (1-12) I, II, III.

The Staff

Prerequisite: Consent of chairman of student's doctoral committee.
Normally limited to a total of 36 units. S/U grade.

Related Courses in Another Department Education

390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Dramatic Art. (3) I, II.

The Staff

Prerequisite: Consent of instructor.

A study of the basic principles of teaching dramatic art; includes an examination and analysis of the literature and materials of dramatic art education.

392. Student Teaching: Dramatic Art.

(3 or 6) I, II, III.

The Staff

Prerequisite: Consent of instructor.
May be repeated.

393. Problems Seminar in the Dramatic Art Major. (1) I, II, III.

The Staff

Prerequisite: Consent of instructor.
May be repeated for two units.

EASTERN LANGUAGES

Chauncey S. Goodrich, Ph.D., *Associate Professor of Classical Chinese (Vice Chairman in charge of Eastern Languages, Department of Germanic and Slavic Languages and Literatures.)*

Robert Hetzron, Ph.D., *Associate Professor of Hebrew.*

Kenneth Pai, M.F.A., *Associate Professor of Chinese.*

Robert L. Backus, Ph.D., *Assistant Professor of Japanese.*

Ali Ahmed Jahadhmy, *Lecturer in Swahili.*

Keiko E. Mochizuki, B.A., *Lecturer in Japanese.*

Charles Wendell, Ph.D., *Lecturer in Arabic and Religious Studies.*

Pauline Wong, M.A., *Lecturer in Chinese.*

TEACHING CREDENTIAL

Students wishing to satisfy a minor for teaching credential purposes in certain eastern languages should consult the Announcement of the Graduate School of Education.

THE MAJOR IN CHINESE

Preparation for the Major—Students may elect to emphasize either Mandarin or Classical Chinese. Those who wish to emphasize Mandarin must take at least three quarters of Classical Chinese; those who wish to emphasize Classical Chinese must take at least three quarters of Mandarin.

The following courses are prescribed: Chinese 1, 2, 3, 4, 5, 6 (for those emphasizing Mandarin); Chinese 1, 2, 3, 101ABC (for those emphasizing Classical Chinese); two quarters of Chinese 8ABC; History 86. Art 6D is recommended.

Requirements for the Major—Forty upper division units dealing with China, of which at least twenty-four must be in language courses. Eight of the 40 units must be chosen from History 184, 185AB, 186ABC, and 190, the balance being selected from Chinese 110AB, 112, and Linguistics 120A (Sino-Tibetan family). Recommended electives are Anthropology 145; Art 182AB; Philosophy 123; Political Science 131, 136; Religious Studies 164AB, 166, 168.

AFRICA

Swahili

Lower Division Courses

1. Elementary Swahili. (4) I. Mr. Jahadhmy
2. Elementary Swahili. (4) II. Mr. Jahadhmy
3. Elementary Swahili. (4) III. Mr. Jahadhmy
4. Intermediate Swahili. (4) I. Mr. Jahadhmy
5. Intermediate Swahili. (4) II. Mr. Jahadhmy
- *6. Intermediate Swahili. (4) III.

Mr. Jahadhmy

- *8ABC. Swahili Conversation. (2–2–2)

Mr. Jahadhmy

Prerequisite: Swahili 3.

32. Introduction to Swahili Literature and to East African Culture. (3) I, II, III.

Mr. Jahadhmy

Introduction to Swahili. English readings of Swahili selections. Ethnic groups in East Africa and

the problems they create. How higher education is uniting East Africa. Folkways of Eastern Africa. All readings and discussion in English.

NEAR EAST

Arabic

Lower Division Courses

1. Elementary Arabic. (4) I. Mr. Wendell
2. Elementary Arabic. (4) II. Mr. Wendell
(Continuation of 1.)
3. Elementary Arabic. (4) III. Mr. Wendell
(Continuation of 2.)
4. Intermediate Arabic. (4) I. Mr. Wendell
(Continuation of 3.)
5. Intermediate Arabic. (4) II. Mr. Wendell
(Continuation of 4.)

Upper Division Courses

- *110A–B–C. Introduction to Arabic Literature. (2–2–2) A I, B II, C III.

Mr. Wendell

* Not to be given 1973–74.

** Enrollments warranting.

Hebrew

Lower Division Courses

1. Elementary Hebrew. (4) I. Mr. Hetzron
2. Elementary Hebrew. (4) II. Mr. Hetzron
(Continuation of 1.)
3. Elementary Hebrew. (4) III. Mr. Hetzron
(Continuation of 2.)

Upper Division Courses

- *110A-B-C. Introduction to Hebrew.
Literature. (2-2-2) Mr. Hetzron
- 115ABC. Readings in Israeli Hebrew. 3-3-3
AI, BII, CIII. Mr. Hetzron
Prerequisite: Hebrew 3 or equivalent.
Intermediate and advanced readings in Israeli Hebrew; grammar review and conversational exercises.
- 120A-B-C. Introductory Biblical Hebrew.
(2-2-2) A I, B II, C III. Mr. Hetzron
Prerequisites: Hebrew 1, 2, 3 or equivalent.
Grammatical features of Biblical Hebrew, elementary reading in the Hebrew Bible.
- 199. Independent Studies in Hebrew. (1-5)
I, II, III. Mr. Hetzron
199 courses are limited to 5 units in one quarter and 12 units total.

Semitic Languages

Upper Division Courses

- *101A-B-C. The Structure of the Semitic Languages. (2-2-2) A I, B II, C III.
Mr. Hetzron
- *120A-B-C. Historical Semitic Linguistics.
(3-3-3) A I, B II, C III. Mr. Hetzron
An introduction to the history of the Semitic languages, reconstruction of Proto-Semitic step-by-step regressively by confronting all the Semitic languages. A. Phonemic system and phonetic developments; B. Morphology and syntax; C. Specific problems in individual groups.

FAR EAST

Chinese

Lower Division Courses

1. Elementary Modern Chinese. (4) I. Mr. Pai
2. Elementary Modern Chinese. (4) II.
(Continuation of 1.) Mr. Pai
3. Elementary Modern Chinese. (4) III.
(Continuation of 2.) Mr. Pai
4. Intermediate Modern Chinese. (4) I.
(Continuation of 3.) Mrs. Wong

5. Intermediate Modern Chinese. (4) II.

(Continuation of 4.) Mrs. Wong

6. Intermediate Modern Chinese. (4) III.

(Continuation of 5.) Mrs. Wong

8. A-B-C. Chinese Conversation. (2-2-2)

A I, B II, C III. Mr. Pai

Prerequisite: Completion of Chinese 3 or equivalent.

Upper Division Courses

101ABC. Elementary Classical Chinese.

(4-4-4) AI, BII, CIII. Mr. Goodrich

Prerequisite: Chinese 3.

Readings in material from ancient prose works such as the *Chan-kuo ts'ue* and *Han-fei tzu*.

110A-B. Survey of Classical Chinese

Literature. (2-2) AI. Mr. Goodrich

Traditional literature from the *Shih ching* to the Yüan Dynasty. Readings, lectures and discussions in English.

*112. Survey of Modern Chinese Literature.

(3) III. Mr. Pai

The literature of modern China from the *Hung-lou-meng* to the present, emphasizing the literature of the May Fourth Movement. Readings, lectures and discussions in English.

*120A-B. Readings in Modern Social and Political Writings. (4-4) A I, B II.

Mr. Pai

Prerequisite: Chinese 6 or equivalent.

Description: Selected readings in Chinese language on social and political writings.

122AB. Advanced Modern Chinese. (4-4)

AI, BII. Mr. Pai

Prerequisite: Chinese 6.

Advanced practice in grammar and composition.

124A-B-C. Readings in Modern Chinese

Literature. (4-4-4) A I, B II, C III.

Prerequisite: Chinese 6.

Mrs. Wong
Readings in the Chinese language, in fiction, drama, and poetry written after 1919.

130ABC. Intermediate Classical Chinese.

(4-4-4) AI, BII, CIII. Mrs. Wong

Prerequisite: Chinese 101C.

Readings mainly in ancient prose, emphasizing the historical and philosophical literature.

*131. Selections from Classical Prose. (3) I.

Mr. Goodrich

*132. Selections from Classical Poetry.

(3) II. Mr. Goodrich

*140. Topics in Chinese Culture. (4) III.

Mr. Goodrich

Various aspects of Chinese traditional culture, emphasizing religion, ritual and the Emperor.

* Not to be given 1973-74.

199. Independent Studies in Chinese. (1-5)

The Staff

199 courses are limited to 5 units in one quarter and 12 units total.

596. Directed Reading and Research. (1-18)

I, II, III.

The Staff

Individual tutorial. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in 596.

Japanese**Lower Division Courses****1. Elementary Japanese. (4) I.**

Mrs. Mochizuki

2. Elementary Japanese. (4) II.

(Continuation of 1.)

Mrs. Mochizuki

3. Elementary Japanese. (4) III.

(Continuation of 2.)

Mrs. Mochizuki

4. Intermediate Japanese. (4) I.

(Continuation of 3.)

Mrs. Mochizuki

5. Intermediate Japanese. (4) II.

(Continuation of 4.)

Mrs. Mochizuki

6. Intermediate Japanese. (4) III.

(Continuation of 5.)

Mrs. Mochizuki

***8. A-B-C. Japanese Conversation. (2-2-2)**

AI, BII, CIII.

Mrs. Mochizuki

Prerequisite: Japanese 3 or equivalent.

Upper Division Courses***101. The Structure of Classical Japanese. (2) III.**

Mr. Backus

Prerequisite: Japanese 5 or equivalent.

Grammar of the classical language. Some reading from a connected classical text.

***105A-B-C. Composition and Conversation. (4-4-4) A I, B II, C III.**

Mr. Backus

Prerequisite: Japanese 6 or equivalent.

Controlled composition and conversation based on a text. This course will complement and run parallel with the 120 series. 120ABC will concentrate on reading (the passive aspect) and 105ABC will concentrate on production in written and oral form (the active aspect).

110AB. Survey of Pre-Modern Japanese

Literature. (4-4) A I, B II. Mr. Backus

A survey of Japanese literature from its beginning to 1867. Readings, lectures, and discussions in English.

* Not to be given 1973-74.

112. Survey of Modern Japanese Literature.

(4) III.

Mr. Backus

A survey of Japanese literature after contact with the West from 1868 to the present. Readings, lectures, and discussions in English.

120A-B-C. Readings in Modern Japanese.

(4-4-4) A I, B II, C III.

Mr. Backus

Prerequisite: Japanese 6 or equivalent.

***140A-B-C. Topics in Japanese Culture.**

(4-4-4) A I, B II, C III.

The Staff

Distinctive features of Japanese culture approached through the Japanese way of thinking, comprising Shinto (A), traditional thought (B), and modern Japanese thought (C). Readings are in English.

***199. Independent Studies in Japanese. (1-5).**

The Staff

199 Courses are limited to 5 units in one quarter and 12 units total.

596. Directed Reading and Research.

(1-18) I, II, III.

The Staff

Individual tutorial. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in 596.

Courses in Other Departments

Sanskrit: See Religious Studies 159A-B-C.

Languages of the Far East: See Linguistics 120A.

Courses Offered in English Translation

(Courses for which no knowledge of a foreign language is required.)

Arabic***110A-B-C. Introduction to Arabic**

Literature. (2-2-2) A I, B II, C III.

Mr. Wendell

Chinese**110A-B. Survey of Classical Chinese**

Literature. (2-2) A I.

Mr. Goodrich

Traditional literature from the *Shih ching* to the Yüan Dynasty. Readings, lectures and discussions in English.

***112. Survey of Modern Chinese Literature.**

(3) III.

Mr. Pâi

The literature of modern China from the *Hung-lou-meng* to the present, emphasizing the literature of the May Fourth Movement. Readings, lectures and discussions in English.

***140. Topics in Chinese Culture. (4) III.**

Mr. Goodrich

Various aspects of Chinese traditional culture, emphasizing religion, ritual and the Emperor.

Hebrew

- *110A-B-C. Introduction to Hebrew Literature. (2-2-2). Mr. Hetzron

Japanese

- 110AB. Survey of Pre-Modern Japanese Literature. (4-4) A I, B II. Mr. Backus

A survey of Japanese literature from its beginning to 1867. Readings, lectures, and discussions in English.

112. Survey of Modern Japanese Literature. (4) III. Mr. Backus

A survey of Japanese literature after contact with the West from 1868 to the present. Readings, lectures, and discussions in English.

*140A-B-C. Topics in Japanese Culture.

(4-4-4) A I, B II, C III. The Staff

Distinctive features of Japanese culture approached through the Japanese way of thinking, comprising Shinto (A), traditional thought (B), and modern Japanese thought (C). Readings are in English.

Swahili

32. Introduction to Swahili Literature and to East African Culture.

(3) I, II, III. Mr. Jahadhmy

Introduction to Swahili, English readings of Swahili selections. Ethnic groups in East Africa and the problems they create. How higher education is uniting East Africa. Folkways of Eastern Africa. All readings and discussion in English.

ECONOMICS

Alec P. Alexander, Ph.D., *Professor of Economics.*

^{1,2}Mortimer Andron, Ph.D., *Professor of Economics.*

M. Bruce Johnson, Ph.D., *Professor of Economics (Chairman of the Department).*

William F. Kennedy, Ph.D., *Professor of Economics.*

Walter J. Mead, Ph.D., *Professor of Economics.*

Robert E. Weintraub, Ph.D., *Professor of Economics.*

J. Frederick Halterman, Ph.D., *Professor of Economics, Emeritus.*

^{1,2}Robert L. Crouch, Ph.D., *Associate Professor of Economics.*

Lloyd J. Mercer, Ph.D., *Associate Professor of Economics (Vice-Chairman of the Department).*

Llad Phillips, Ph.D., *Associate Professor of Economics.*

Harold L. Votey, Jr., Ph.D., *Associate Professor of Economics.*

Robert T. Deacon, Ph.D., *Assistant Professor of Economics.*

John M. Marshall, Ph.D., *Assistant Professor of Economics.*

Robert H. McGuckin, III, Ph.D., *Assistant Professor of Economics.*

W. Douglas Morgan, Ph.D., *Assistant Professor of Economics.*

Perry Shapiro, Ph.D., *Assistant Professor of Economics.*

Donald R. Winkler, Ph.D., *Assistant Professor of Economics.*



Daniel K. Benjamin, M.A., *Acting Assistant Professor.*

H. E. Frech, III, M.A., *Acting Assistant Professor.*

Michael P. Ward, M.A., *Acting Assistant Professor.*

Carroll Barrymore, J.D., *Lecturer in Economics.*

Tapan K. Biswas, Ph.D., *Lecturer in Economics.*

Amor Gosfield, Ph.D., *Lecturer in Economics.*

Peter J. McCabe, A.B., *Lecturer in Economics.*

Gerald P. O'Driscoll, Jr., *Lecturer in Economics.*

PREPARATION FOR THE MAJORS

Lower division requirements: three lower division courses are required. These are Economics 1 and 2 and either Economics 5 (Introduction to Economic Statistics) or Economics 6 (Applications of Mathematics in Economics). More advanced mathematics or statistics courses may be substituted for Economics 5 or 6. Economics 5 or 6 should be completed prior to upper

* Not to be given 1973-74.

¹ On leave Fall 1973.

² On leave Winter 1974.

³ On leave Spring 1974.

division work. Upper division students transferring to the economics major from another major or another institution may take Economics 109 rather than Economics 1 and 2. Economics 109 can be taken concurrently with Economics 100A, 104A, 101 or 105.

THE MAJORS: ECONOMICS AND BUSINESS ECONOMICS

The undergraduate programs in economics and business economics are designed to serve several objectives. In combination with other courses from the College of Letters and Science, either major provides the opportunity for general cultural and intellectual development. Either major is particularly useful in supplying basic training for students planning careers in business or government, and offers valuable preparation for such professions as law and journalism. The economics major provides the opportunity to build a solid foundation for graduate work in either economics or administration. The business economics major offers the same opportunity for graduate work in administration.

Requirements for the Major

A. The Economics Major

Thirty-six upper division units in economics are necessary for the major. Three courses, Economics 100A or 104A, 100B or 104B, and 101 or 105, are required. The student may choose 24 units of other upper division economics courses with the restriction that Economics 109 does not count toward the upper division requirements. Also, major credit will not be given for both Economics 110 and 185.

B. The Business Economics Major

Requirements for the business economics major are the same as for the economics major with the exception that at least four upper division electives must be selected from the following courses: Economics 102A, Economics 106A, Economics 106B, Economics 116, Economics 118, Economics 124, Economics 133, Economics 134, and Economics 175.

PREPARATION FOR PROFESSIONAL TRAINING

A. Graduate Training in Economics

The Department recommends that students interested in graduate study in economics take Economics 104AB and 105 (economic theory with a mathematical and pure theory emphasis). In addition, electives should be chosen from the following courses: 102A, 102B, 102C, 141ABC, and 143. Courses in calculus, matrix theory, differential equations and analysis are also recommended for students interested in graduate study in economics.

B. Career in Public or Business Administration

It is recommended that students interested in preparation for a career in administration include the following economics courses in their program: 106AB, 133, 134, 140, 141ABC, and 143. In addition, mathematics topics listed above as preparation for graduate study in economics are suggested. Mathematics 12 (Mathematics of Finance) is also suggested for business economics students.

COMBINATION SOCIAL SCIENCES MAJOR

Students interested in obtaining a major in the combined social sciences, see listing under "Social Sciences".

THE DEGREE OF MASTER OF ARTS

Requirements

An undergraduate major in economics is not required for admission to the graduate program, but the department does require that specific courses—particularly economic theory—be passed with distinction. At least one quarter of calculus is also required. With the consent of the department, students with an inadequate undergraduate background in economics can

be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate courses.

Students may elect to work under either of two plans. The respective requirements of these plans are:

Plan IIA

1. 36 units of course work, 12 units of which may be satisfied by upper division undergraduate courses.
2. Economics 205AB, Economics 204A, and Economics 140 are required.
3. A comprehensive oral examination in economic theory and *two* elective fields.

Plan IIB

1. 36 units of course work consisting of all the courses typically taken in the first year of the Ph.D. program.
2. A comprehensive oral examination in micro-economic theory, macro-economic theory, and one elective field.

Plan IIA is designed for students who enter with an M.A. degree specifically in mind. Plan IIB is designed to allow students in the Ph.D. program to acquire an M.A. degree after they have taken an appropriate number of primarily Ph.D. courses and an oral examination.

There is no language requirement for the M.A. degree. A well-prepared student can obtain the M.A. degree in one year.

URBAN ECONOMICS INTERNSHIP OPTION

The Urban Economics option in the Masters Degree program is unique in its approach to this challenge. It is problem oriented and highly flexible. The working philosophy of the program is to view the urban problem as one of resource allocation. The core of classroom study will be courses in economic decision-making.

PROGRAM SEQUENCE

	FALL	WINTER	SPRING	SUMMER/ Fall	WINTER
Economic Theory	Theory of the Firm and Markets	Linear Programming Input-Output	Elective*	Internship	Decision Theory or Elective*
Policy Analysis and Implementation	Public Administration or Urban Politics	Public Expenditure and Revenue	Urban Economics		Seminar on Internship Experience
Tools	Statistics	Econometrics	Accounting		Elective*
Emphasis			Elective*		Elective*
Laboratory (Computer Use)	Statistics	Econometrics	Accounting		Preparation of Masters Essay

*Elective courses will be selected by the student to make up and total 12 units per quarter.

The second subgroup will deal with the analysis and implementation of public policy. Courses in both economics and political science are included in this set. These courses are designed to acquaint the student with the realities under which decisions are formulated.

The third set deals with tools, such as statistics and accounting, that will be useful to the student in his future employment. Additionally the student will be required to participate in a laboratory designed to provide him the opportunity to practice newly acquired skills and to learn the techniques of modern computerized data manipulation and computation.

The fourth group of courses will accommodate the individual student's area of particular

interest in the urban sector. These will be elective and will relate to such areas as urban and regional economics, environmental economics, economics of human resources relating to education, public health, criminal justice, and man-power problems, public finance, public administration, urban politics, and appropriate courses in sociology, biology, physics and various areas of specialization in engineering relating to the provision of urban services and the control of the urban environment.

The final requirement for the degree will be a masters project: a report on research, initiated by the student and dealing with a problem relevant to his internship.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

An undergraduate major in economics is not required for admission to the graduate program, but the department does require that specific courses—particularly economic theory—be passed with distinction. At least one quarter of calculus is also required; prospective students, however, are advised to take as much mathematics as possible, particularly calculus and matrix algebra. With the consent of the department, students with an inadequate undergraduate background in economics can be admitted, but they will be required to remedy any deficiencies by taking appropriate undergraduate courses.

There are no specific *course* requirements for the Ph.D. degree. Five *fields* are required of which two are specified: 1) economic theory and 2) quantitative economics. Three additional fields will be selected from the list of twelve electives presently offered by the Department. With the Department's approval, one elective may be chosen from an outside discipline.

Normally, after two years of course work a student is prepared to take his General Examinations in economic theory, quantitative economics, and his three elective fields (except that a student need *not* take a General Examination in *one* elective field if he passed both courses in that field with a grade of A- or better).

After passing the General Examinations, the student commences work on his dissertation.

There is no language requirement for the Ph.D. degree. A well-prepared student can obtain the Ph.D. degree in three years.

THE DEGREE OF CANDIDATE IN PHILOSOPHY (C. Phil.)

Requirements

On advancement to candidacy for the Ph.D. degree (i.e., after having completed his General Examinations, but before completing his dissertation), a student may petition for the award of a C.Phil. degree. This is specifically designated as a non-terminal degree. Eligibility for the C.Phil. degree is limited to a period of seven years following advancement to candidacy for the Ph.D. degree.

A well-prepared student can obtain a C.Phil. degree in two years.

TEACHING CREDENTIALS

A major in economics may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Economics and in the Graduate School of Education.

ECONOMICS

Lower Division Courses

1. Principles of Economics—Micro. (4) I, III. Mr. Mead

An introduction to micro-economic analysis, institutions and policies. Econ 2 may be taken before Econ 1.

2. Principles of Economics—Macro. (4)

I, II.

Mr. Benjamin

An introduction to macro-economic analysis, institutions and policies.

5. Introduction to Economic Statistics.

(4) I, II.

The Staff

Prerequisites: Economics 1 and 2.

An introduction to the analysis of economic data, computer programming and use, and elementary

statistical methods. Confrontation of economic theories with appropriate data as the vehicle for introducing quantitative methods in problem solving. Two lectures and a two hour seminar section weekly.

6. Applications of Mathematics in Economics.

(4) I, III. Mr. Biswas

Prerequisites: Economics 1 and 2.

An introductory survey of the application of mathematics in economics. Topics in economic theory are analyzed with the use of mathematical techniques from the calculus.

Upper Division Courses

100A. Microeconomic Theory and Policy.

(4) I, II, III. Mr. Gosfield

Mr. Johnson, Mr. Frech, Mr. Marshall

Prerequisites: Economics 1 and 2 or 109.

Economic theory relating to demand, production and competitive product markets with emphasis on applications of theory. Credit not given for both 100A and 104A.

100B. Microeconomic Theory and Policy.

(4) I, II, III. Mr. McGuckin,

Mr. Johnson, Mr. Shapiro

Prerequisite: Economics 100A.

Economic theory relating to non-competitive product markets, input markets, and welfare with emphasis on applications of theory. Credit not given for both 100B and 104B.

101. Static Macroeconomics and Policy.

(4) I, II, III. Mr. Morgan, Mr. O'Driscoll

Prerequisites: Economics 1 and 2 or Economics 109.

Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on applications of theory.

102A. Advanced Topics in Microeconomics.

(4) I. The Staff

Prerequisite: Economics 100B or 104B.

Elements of linear programming, input-output analysis and game theory.

102B. Dynamic Macroeconomics. (4) II.

The Staff

Prerequisite: Economics 101 or 105.

Analysis of dynamic macroeconomic systems, including economic fluctuations, growth and stabilization.

102C. Advanced Macroeconomics. (4) III.

Mr. Benjamin

Prerequisites: Economics 100B or 104B, and 102B.

Selected topics in short run and long run dynamic economic theory and policy.

103. History of Economic Thought. (4) III.

Mr. Kennedy

Prerequisites: Economics 1 and 2, or 109.

The history of economic thought in relation to its social setting from ancient Greece and Rome to Marxism and Marginalism in the nineteenth century.

104A. Microeconomic Theory. (4) I, III.

Mr. Ward

Prerequisites: Economics 1 and 2 or 109, plus

Economics 6 or Math 34A and 34B.

Economic theory relating to demand, production, and competitive product markets with emphasis on pure theory and use of techniques from the calculus. Credit not given for both 104A and 100A.

104B. Microeconomic Theory. (4) I, II.

Mr. Deacon

Prerequisite: Economics 104A.

Economic theory relating to non-competitive product markets, input markets, and welfare with emphasis on pure theory and use of techniques from the calculus. Credit not given for both 104B and 100B.

105. Static Macroeconomics. (4) II, III.

Mr. Benjamin, Mr. Marshall

Prerequisites: Economics 1 and 2 or 109, plus Economics 6 or Math 34A and 34B.

Contemporary analysis of income, employment, and price level and public policy using a static general equilibrium framework with emphasis on pure theory and use of techniques from the calculus.

106A-B. Accounting Concepts. (4-4) I, II.

Mr. Frech

Concepts basic to accounting theory and practice as related to the various types of business organization, cost accounting, budgets, and analysis of financial statements.

107. Comparative Economic Systems.

(4) II.

The Staff

Prerequisite: Economics 100B or 104B.

Socialism, fascism, and capitalism contrasted with regard to economic decision-making, organization of production, mechanism of exchange, banking and investment, distribution of income, status of labor, international trade, and public finance.

108. Institutional Economics. (4) III.

Mr. Kennedy

Prerequisites: Economics 1 and 2 or 109.

A history of the economic thought of the American institutional school of Veblen, Commons, and Mitchell, and their successors in Heterodox and Radical Economics. Not to be offered 1971-72.

†109. Introduction to Economics. (4) I, II, III.

Mr. Gosfield, Mr. O'Driscoll

Not open to those who have taken Economics 1 and Economics 2. Economics majors may enroll in Economics 109 only if they have upper division standing. Serves as a prerequisite for upper division economics courses.

Intensive study of economic principles.

110. Contemporary Economic Problems. (4)

I, III.

Mr. Morgan, Mr. Mercer

Current social-economic problems will be analyzed, each by a qualified staff member. Topics may include the following: the economics of poverty, discrimination, war, monopoly, the stock market, gold, inflation-deflation, economic growth, and alternative economic systems.

112. Economic History of Europe. (4) II.

Mr. O'Driscoll

Prerequisites: Economics 1 and 2 or 109.

Survey of the economic development of Europe from the Middle Ages to recent times.

† Does not count as upper division major elective.

113A. Economic History of the United States to 1900. (4) I. Mr. Mercer

Prerequisites: Economics 1 and 2 or 109.

A survey of U. S. economic development from colonial times to the end of the nineteenth century with emphasis on issues related to U. S. economic growth and public policy as it affected both growth and the distribution of income.

113B. Twentieth Century United States Economic History. (4) III Mr. Mercer

Prerequisites: Economics 1 and 2 or 109.

A survey of U. S. economic development in the twentieth century with emphasis on issues related to the growth, instability and distribution of income. The impact of public policy on economic growth, instability and income distribution will be an important theme of the course.

114. Economic Development. (4) I. The Staff

Prerequisites: Economics 1 and 2 or 109.

Applications of economic theory to the problems of developing nations.

115. Environmental Economics. (4) I, III.

Mr. Deacon
Prerequisites: Economics 1 and 2, or Environmental Studies 3 and 4.

Economic analysis of environmental decision-making. Determination of the optimum level of pollution. Examination of the concept of externalities, estimation of social versus private costs and benefits, common property resources, welfare theory and production theory applied to problems of pollution.

116. Industrial Organization and Public Policy. (4) II, III. Mr. McGuckin, Mr. Mead

Prerequisites: Economics 100B or 104B.

Analysis of competition, monopolistic competition, oligopoly and monopoly theories and practices.

117. The Soviet Economy. (4) Mr. Mercer

Prerequisite: Economics 100B or 104B.

An analytical and statistical survey of the organization and operating principles of the Soviet economy in the light of geographic and historical backgrounds. Not offered 1973-74.

118. Legal Analysis for Business

Management. (4) III. Mr. Barrymore
The essentials of analysis of the law of contracts and their economic significance.

119. Consumer Economics. (4) II.

Mr. Johnson
A survey of topics in contemporary consumer economics: consumption functions, decision theory, consumer protection, investment in durable goods, effects of advertising, the distribution of income, the financial returns to education, financial planning.

120. Urban and Regional Economics.

(4) I, III. Mr. Winkler, Mr. Marshall
Prerequisites: Economics 1 and 2 or 109.

Economic analysis applied to current urban and regional problems.

122. Natural Resource Economics. (4) II.

Mr. Mead

Prerequisite: Economics 100B or 140B.

Microeconomic theory and capital theory applied

to problems of conservation and management of natural resources. Analysis of public policy with special emphasis upon energy resources and the energy crisis. Additional topics may include examination of water, fishery, and outdoor recreation resource management.

124. Business Ethics and Social

Responsibility. (4) I. Mr. Kennedy

Prerequisites: Economics 1 and 2 or 109.

Application of ethics to the decisions of economic life; the responsibilities of individuals and economic organizations.

125. An Inquiry into the Economics of Power and Conflict. (4) III. Mr. McCabe

An investigation of the role of large organizations (e.g., trade unions, corporations, bureaucracies) and other decision-making groups possessing collective influence in society and the neglect of the concept of economic power in economic theory.

130. Public Finance. (4) I. Mr. Morgan

Prerequisites: Economics 100A and/or 104A and Economics 101 or 105.

Fiscal theory and policy. Incidence and effects of taxation, government expenditure programs and public debt operations.

131. Public Sector Accounting. (4) III.

Mr. Patrick

Prerequisite: Economics 100A or 104A or consent of instructor.

Basic accounting techniques applicable to fiscal management of local government with particular emphasis on taxation, budgeting, and debt management.

133. Investments. (4) II.

Mr. Andron

Prerequisites: Economics 1 and 2 or 109.

Sources and demand for investment capital, salient characteristics of governmental and corporate securities, operation of security markets, determination of investment policy, and procedures for analysis of securities.

134. Financial Management. (4) II.

Mr. Andron

Prerequisite: Economics 100B or 104B.

Analysis and management of the flow of funds through an enterprise. Sources and application of funds, types and sources of long term capital. Introduction to the supply of investment funds and the organization of capital markets.

135. Monetary Economics. (4) III.

Mr. O'Driscoll

Prerequisite: Economics 101 or 105.

Survey of monetary theory, the banking system and the supply of money, monetary policy and current issues.

140. Economic Forecasting, Econometrics and Quantitative Methods. (4) II.

Mr. Fabrikant

A practical course in the development of economic models, analysis of specific functional forms, and the application of forecasting and estimation techniques. Emphasis is placed on the student's use of the computer facility as an aid in applying these techniques for the study of social and economic problems.

141A-B-C. Econometrics. (4-4-4) I, II, III.

Mr. McCabe, Mr. Ward

Prerequisite: Math 34ABC or equivalent.

The application of quantitative methods in economics. 141A will cover probability and its use in decision theory, distributions and their application to the distribution of income and firms, inference and hypothesis testing and their application in econometric estimation and model construction. 141B will continue with estimation covering the general linear regression model, Bayesian procedures, and applications of non-parametric techniques. 141C will discuss specific problems which arise in the course of estimating economic models, such as, the use of dummy variables, heteroscedasticity, multicollinearity, autocorrelation and an introduction to simultaneous equation estimation.

143. Mathematical Economics. (4) III.

The Staff

Prerequisites: Economics 104B and 105.

Application of mathematics to selected topics in micro- and macro-economic theory.

150. Labor Economics. (4) III. Mr. Phillips

Prerequisite: Economics 100B or 104B.

The impact of unions on wages, income distribution, employment and prices. The role of government in collective bargaining.

160. Economics of Crime and Justice. (4) II.

Mr. Phillips, Mr. Votey

Examines social policy to minimize the losses to crime and the costs of crime control. Develops the economics of crime generation, law enforcement, prosecution, corrections and punishment.

165. The Economics of Poverty. (4) I.

The Staff

Prerequisite: Economics 1 or 2.

Description and analysis of existing and proposed programs to alleviate the impact of poverty with special application to the United States. Programs to be studied include the existing welfare structure, various negative income tax and family assistance schemes, education, minimum wage legislation, social insurance and commodity subsidies.

167. Population Economics. (4) III. Mr. Ward

An introduction to the study of the causes and effects of population change from the viewpoint of economics. Relevant economic theory will be developed to explain the fertility of families and the marital behavior of individuals. Both historic and contemporary evidence will be examined and interpreted with the models developed. Effects of population change on economic growth and welfare along with various policy prescriptions designed to control population growth will be analyzed.

175. Government and Business. (4) III.

Mr. McGuckin

Analysis of alternative public policies for maintaining competitive performance in the economy.

180. International Trade. (4) I. Mr. Votey

Prerequisite: Economics 100B or 104B.

Historical and contemporary trade mechanisms; international trade theory; trade and welfare.

181. International Finance. (4) III. The Staff

Prerequisite: Economics 101 or 105.

International money and capital markets and their impact on the domestic and world economies; international financial institutions and policies.

185. Economics Research and Policy.

(4) II.

Mr. Votey and The Staff

Prerequisites: 100A, 100B & 101, or 104A, 104B & 105.

This class is designed for majors who have finished the theory requirements. The class will be taught by 7-10 members of the staff who will discuss the application of economic theory to contemporary research problems and policy issues with which they are concerned. The class will be taught at an advanced level and will cover topics such as the environment, energy, congestion, water, education, population, crime, and other research topics of interest to the faculty. Economics 110 and Economics 185 can not both count toward the major.

194. Group Studies. (1-4) I, II, III. The Staff

Prerequisites: Upper Division standing and admission by special arrangement.

Intensive study and research on a topic in economics selected by the student with the guidance and approval of a faculty member. Subject to Departmental approval, students may repeat this course, however, only 4 units may count toward the major.

196H. Senior Honors Seminar. (4) II.

Mr. McCabe

Prerequisites: Senior standing with 3.0 or better average in the major.

Advanced topics in economic theory and policy. Weekly seminar discussions led by various members of the economics faculty.

199. Independent Studies in Economics.

(1-5) I, II, III.

The Staff

Admission by special arrangement.

199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses**200A-B-C. Micro-Economic Theory. (4-4-4)**

200A: I. 200B: II. 200C: III.

Mr. McCabe, Mr. Frech, Mr. Johnson

200A. Methodology, theory of consumer behavior and demand, modern utility theory, revealed preference.

200B. Theory of the firm, linear programming and operations analysis, equilibrium under pure competition.

200C. Theory of market types, distribution.

201. General Equilibrium Theory and

Welfare. (4) I.

Mr. Biswas

Survey of general equilibrium and welfare theories, from Walras and Pareto to the present.

202. Advanced Topics in Economic Theory.

(1-4) II, III.

Mr. Deacon, Mr. Mead

Reading and discussion of selected topics and recent literature in current economic theory. Specific material will vary from quarter to quarter. May be repeated for credit.

203A-B. History of Economic Thought.

(4-4) 203A: I. 203B: II. Mr. Kennedy

203A. Analysis of the relationships between social conditions, economic theory, and economic policy from the medieval to the classical period.

203B. Analysis of the relationships between social conditions, economic theory, and economic policy from the neo-classical period to the present. Methodological problems including relationships to the sociology of knowledge and general intellectual history.

204A-B. Macro-Economic Theory. (4-4)

204A: II. 804B: III.

204A. Static macro-economic theory. Classical, Keynesian and post-Keynesian theory of national income and employment.

204B. Dynamic macro-economic theory. Capital theory, models of economic fluctuations, growth, stabilization and inflation.

205A-B. Economic Decisions. (4-4)

205A: I. 205B: II.

Mr. Shapiro, Mr. Winkler

The course will establish the ideas and techniques of optimally allocating scarce resources. The student will learn the nature of objective functions and constraints in theory and through examples describing rational economic behavior of individuals, firms, and public bodies.

207A-B. Comparative Economic Systems.

(4-4) 207A: II. 207B: III. The Staff

207A. Criteria for performance of economic systems. Characteristics and problems of command economies.

207B. Problems of decentralization in the command economy; tools of control; market socialism and planning.

212. Economic History of Europe. (4).

Mr. Mercer

Issues in European economic history.

213. American Economic History. (4) III.

Mr. Mercer

Issues in American economic history.

214A-B. Economic Development.

(4-4) 214A: II. 214B: III.

Mr. Alexander, Mr. Votey

Comparative economic growth with emphasis on the development of underdeveloped economies.

216A-B. Industrial Organization and**Public Policy. (4-4) 216A: II.**

216B: III. Mr. McGuckin, Mr. Mead

Advanced topics in industrial organization and public policy.

220A-B. Urban and Regional Economics.

(4) 220A: I. 220B: III.

Mr. Marshall, Mr. Winkler

220A. The theory of city and regional economics. Economic theory when distance is taken as an important determinant of economic activity.

220B. Urban and Regional Policy. The application of theory to policy decisions.

230A-B. Public Finance. (4-4)

230A: II. 230B: III.

Mr. Morgan

230A. Public finance and taxation theory.

230B. Public debt management and fiscal policy.

235A-B. Money and Banking. (4-4)

235A: I. 235B: II.

Mr. Benjamin, Mr. O'Driscoll

235A. Monetary theory.

235B. Analysis of monetary institutions and monetary policies. Not to be offered 1971-72.

240. Mathematics for Economists I. (4) I.

Mr. Ward

Selected topics in mathematics of particular importance to economists including the calculus, difference and differential equations.

244A-B. Mathematical Economics. (4-4)

244A: II. 244B: III.

Mr. Biswas, Mr. McCabe

Prerequisite: Economics 241, 242, 243 or permission of the instructor.

Mathematical analysis of economic theory.

245A-B. Econometrics. (4-4) II, III.

Mr. Phillips, Mr. Ward

245A. Development of the theory of single equation and simultaneous equations estimation.

245B. Econometric studies.

250A-B. Labor Economics. (4-4) I, II.

Mr. Phillips

Theoretical and empirical analyses of the structure of wages, the labor market, distributive shares in national income, investment in human resources, national manpower and wage policy and other topics in industrial relations.

280A-B. International Trade. (4-4)

280A: I. 280B: III.

Mr. Marshall, Mr. Pippenger

280A. International trade theory.

280B. International finance.

594AA-594ZZ. Special Topics in Economics.

(1-4) I, II, III.

The Staff

Prerequisites: Graduate standing and consent of instructor.

Special seminar on research subjects of current interest.

595AA-595ZZ. Group Studies in Economics.

(4) I, II, III.

The Staff

Prerequisites: Graduate standing and consent of instructor.

Critical review of research in selected fields.

596AA-596ZZ. Directed Reading and**Research. (2-4) I, II, III.**

The Staff

Prerequisites: Graduate standing and consent of instructor.

Individual tutorial.

597. Individual Study for Master's Comprehensive Examination and Ph.D. Examinations. (1-12) I, II, III. The Staff

Prerequisites: Graduate standing and consent of instructor.

No unit credit allowed toward advanced degree.

598AA-598ZZ. Master's Thesis Research and Preparation. (1-12) I, II, III. The Staff

Prerequisites: Graduate standing and consent of instructor.

Only for research underlying the thesis, writing the thesis. No unit credit toward the degree will be given.

599AA-599ZZ. Dissertation Preparation.

(1-12) I, II, III.

The Staff

Prerequisites: Graduate standing and consent of instructor.

Only for preparation of the dissertation.

EDUCATION

Norman J. Boyan, Ed.D., *Professor of Education (Dean, Graduate School of Education)*.

Edwin M. Bridges, Ph.D., *Professor of Education*.

George I. Brown, Ed.D., *Professor of Education*.

John W. Cotton, Ph.D., *Professor of Education and Psychology*.

Chester W. Harris, Ph.D., *Professor of Education*.

Ralph K. Nair, Ed.D., *Professor of Education*.

Kermit A. Seefeld, Ed.D., *Professor of Education*.

Stewart B. Shapiro, Ph.D., *Professor of Education*.

R. Murray Thomas, Ph.D., *Professor of Education*.

John A. R. Wilson, Ed.D., *Professor of Education*.

Naftaly S. Glasman, Ph.D., *Associate Professor of Education (Associate Dean, Graduate School of Education)*.

Ray E. Hosford, Ph.D., *Associate Professor of Education*.

Jules M. Zimmer, Ed.D., *Associate Professor of Education*.

Donald R. Atkinson, Ph.D., *Assistant Professor of Education*.

James H. Block, Ph.D., *Assistant Professor of Education*.

Mark Phillips, Ed.D., *Assistant Professor of Education*.

Roulette W. Smith, Ph.D., *Assistant Professor of Education*.

Donald Winkler, Ph.D., *Assistant Professor of Economics and Lecturer in Education*.

Robert M. Bortnick, M.A., *Acting Assistant Professor of Education*.



Robert M. Arce, M.A., *Lecturer in Education, Supervisor of Teacher Education (Secondary Spanish)*.

Willis D. Copeland, M.A., *Lecturer in Education*.

Vernon E. Cotter, Ph.D., *Lecturer in Education (Coordinator of Supervised Teaching, Secondary Schools)*.

Richard Jamgochian, Jr., Ph.D., *Lecturer in Education (Head of Teacher Education)*.

Harleen W. McAda, Ph.D., *Lecturer in Education, Supervisor of Teacher Education (Secondary Science)*.

Carolyn N. Cogan, B.A., *Supervisor of Teacher Education (Elementary Schools)*.

Robert H. Elsner, M.B.A., *Supervisor of Teaching Education (Secondary Mathematics)*.

Geraldine Metz, M.A., *Supervisor of Teacher Education (Secondary French)*.

Glenn S. Pate, Ph.D., *Supervisor of Teacher Education (Secondary Social Studies)*.

John Romo, M.A., *Supervisor of Teacher Education (Elementary Schools)*.

Glenn W. Durlfing, Ed.D., *Professor of Education, Emeritus*.

Elizabeth H. Irish, Ed.D., *Professor of Education, Emeritus*.

Charles L. Jacobs, Ph.D., *Professor of Education, Emeritus*.

Edith M. Leonard, M.A., *Professor of Education, Emeritus*.

Elsie A. Pond, M.A., *Professor of Education, Emeritus*.

Lester B. Sands, Ed.D., *Professor of Education, Emeritus*.

Loretta M. Byers Sauer, Ed.D., *Professor of Education, Emeritus*.

Dorothy D. VanDeman, M.A., *Professor of Education, Emeritus*.

¹ Absent on Leave, Fall 1973.

² Absent on Leave, Spring and Summer 1974.

³ Absent on Leave, 1973-74.

ADVANCED DEGREES IN EDUCATION: MASTER OF ARTS IN EDUCATION

The purpose of this degree program is to add to the competence of experienced elementary-school or secondary-school teachers in academic disciplines as well as pedagogical or research skills.

Admission to the Program. In addition to satisfying the requirements of the Graduate Division, a candidate for admission must ordinarily hold a valid California teaching credential or its equivalent and a bachelor's degree or its equivalent from an institution of acceptable standing. To seek admission, a candidate applies to the Graduate Division, UCSB, for application forms.

Nature of the Program. Within the general program candidates must select a specific area of emphasis or concentration. Programs in confluent education, educational psychology, elementary reading—language arts emphasis, supervision, and curriculum development are currently available. Applicants with interests in other areas of work are encouraged to consult the Education-Advising Office to determine program availability. Each candidate and his adviser and advisers construct a total program acceptable to both parties. Two options for total course requirements are available: Plan I requires 30 quarter units of course work, of which at least 12 quarter units must be in graduate (200 level) courses, plus a thesis, with an oral examination over the thesis; Plan II requires 36 quarter units of course work, of which at least 18 must be in graduate (200 level) courses, plus a comprehensive examination covering the areas studied in the candidate's program. The form of the examination shall be determined by the candidate's adviser or advisers. There is no blanket foreign language requirement for all candidates.

At the discretion of the Department of Education, a candidate will be assigned either (A) one advisor in Education, or (B) one advisor in Education and a co-advisor in an appropriate department of another college or professional school on the campus.

Admission is subject to the availability of a program of study in the candidate's subject matter field or fields.

MASTER OF EDUCATION (COUNSELING PSYCHOLOGY)

Prerequisites: Background in Behavioral Sciences. Students not possessing a B.A. degree in anthropology, education, psychology or sociology will be expected to take appropriate courses or demonstrate knowledge competency in the areas of individual, group and institutional development and behavior.

Admission Procedure. All applicants must gain admission to the Graduate Division in the Master of Education (Counseling Psychology) Program. Concurrent with his submitting his application to the Graduate Division, the candidate should submit a report of his performance on the Graduate Record Examination Aptitude Test or the Miller Analogies Test. The deadline for submission of a complete application file is March 15. The Graduate School of Education will contact those applicants who qualify and set up a date and time for interviews. Those not qualifying for the interviews will be notified by the Graduate Division. The interviews are usually held during the month of April. If the applicant does not live in Southern California and finds it impossible to arrange for these interviews, he may by correspondence furnish to the interview board in writing:

- (1) a statement of professional goals,
- (2) reasons for choosing counseling psychology rather than some other field for advanced professional education, and
- (3) an autobiography.

Master of Education Degree (Counseling Psychology) and Pupil Personnel Services Credential. The Counseling Psychology Program is designed to provide the student with skills of observing, interpreting, modifying and evaluating behavior within individual, group, and institutional settings. While the basic Master's Degree program has 48 quarter-units required (37 specified; 11 units of electives), a candidate's individual background and goals ultimately determine his program.

In addition to the Master of Education Degree, students may pursue courses leading to the Standard Designated Services Credential with a specialization in Pupil Personnel Services as (1) Pupil Counselor, (2) Psychometrist, and (3) Psychologist. See the *Graduate School of Education Announcement* for details.

Candidates are strongly encouraged to elect full-time attendance since it permits a better-integrated set of learning experiences than does a part-time program. However, for applicants who cannot attend full time, provisions can be made for part-time attendance. No program of less than one-half time is permitted, unless approved by the director of the program and with the consent of instructor.

DOCTOR OF PHILOSOPHY IN EDUCATION

Fields of Study. The areas in which candidates can be accepted at present include the following: educational psychology, counseling psychology, international education (with concentration on Indonesia and Malaysia), confluent education (integration of the affective and cognitive domains of inquiry and learning), and educational administration.

In a few cases a potential candidate may wish to direct his studies toward a specialization which is not encompassed in one of the fields mentioned above. It may be possible, in such instances, for the School to prepare a special program that would accommodate the individual's particular constellation of interests and at the same time meet the Ph.D. requirement of strong scholarship in an area of emphasis. Potential applicants who believe they fit this category should submit to the School a clear description of the goals in order to determine whether there is an adviser available who is willing to sponsor the candidate's admission and supervise his program.

Admission. Students may be admitted for the fall, winter, and spring quarters for all programs. Applications for fall admission will generally be considered up to and including March 15. Exceptional cases will be considered up to August 1.

To gain admission, an applicant must fulfill the general requirements for admission to graduate status and must submit a report of his performance on at least one of two tests (Miller Analogies or Graduate Record Examination Aptitude Test). In addition, he is required to present a description of how his proposed doctoral study relates to his own background and to his plans for the future.

Only applicants whose records suggest clear potential for succeeding in doctoral studies will be accepted into the program.

Characteristics of the Program. The purpose of the program is to prepare highly capable scholar-researchers who will perform as scholars and skilled professionals in their chosen field.

No specific total number of course units which a student must accumulate prior to his receiving the doctorate will be prescribed.

Residence Requirement. The minimum residence requirement for the Ph.D. degree is two years. Students in doctoral programs will spend at least six quarters in residence pursuing a program of full-time study and research on the Santa Barbara campus; three consecutive quarters of this residence must be completed in regular session before advancement to candidacy. Exceptions to this rule may be granted only by the Graduate Council.

If a student needs skill in one or more foreign languages or in statistics and computer technology in order to pursue his special field of study most effectively, then such requirements will become part of his study program. However, there is no general foreign language or statistics requirement which every candidate must fulfill.

Detailed information regarding these advanced degrees in education is given in the *Graduate School of Education Announcement* and in the *Graduate Division Announcement*.

CREDENTIAL PROGRAMS

Credentials for service in public schools in California are issued by the State upon recommendation of institutions authorized for teacher training. The Department of Education provides the professional education courses and directs the student teaching program for all credentials. There are certain acceptable standards which must be met by candidates for

teaching credentials, including such qualifications as intelligence, scholarship, aptitude for teaching, physical fitness, and personality. All candidates must be in good standing in the Graduate Division on completion of any credential program.

Student Teaching: All students entering Supervised Teaching in the secondary program must have completed a teaching major and minor that have been approved by the appropriate departments. A *minor is optional with an academic major*. Individual departments will be the judge of a person's competence in that subject-matter field.

Foreign language majors and minors must present evidence of their proficiency in the spoken foreign language as a prerequisite to student teaching in that subject field.

Health clearance by the Student Health Service on this campus is required prior to student teaching.

The Graduate School of Education offers graduate programs leading to recommendation for the following credentials:

Standard Teaching Credential with a Specialization in Early Childhood Education;

Standard Teaching Credential with a Specialization in Elementary School Teaching;

Standard Teaching Credential with a Specialization in Secondary School Teaching;

Standard Supervision Credential;

Standard Designated Services Credential with a Specialization in Pupil Personnel Service, Psychometry and School Psychologist; and Restricted Speech and Hearing Credential.

For detailed information concerning credential programs, see the *Graduate School of Education Announcement*.

EDUCATION

Upper Division Courses

114. Introductory Educational Statistics. (4)

I, II. Mr. Cotton, Mr. Harris, Mr. Smith

Prerequisite: College algebra or permission of instructor.

Measures of central tendency and variability. Sets, sample spaces, and random variables. Introduction to estimation theory and hypothesis testing. Binomial, normal, *t*, and chi-square distributions. Bivariate normal distribution.

164. Educational and Vocational Guidance.

(3) III. Mr. Nair

Prerequisite: Consent of instructor.

Examination of vocational development theory, the sociology of work, and school programs focused upon individual decision making. Participation in relevant community surveys.

183. Group Leadership, Theory and Practice.

(4) The Staff

Prerequisite: Consent of instructor.

Participation in a group experience, and examination of relevant research.

199. Independent Studies. (1-5) I, II, III.

The Staff

Prerequisite: Open only to advanced students approved by the chairman of the department.

Study of special problems in various fields of education. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses

200. Research Methods in Education.

(3) II. Mr. Cotton

Prerequisites: Education 114, graduate standing and consent of instructor.

Basic principles of scientific method exemplified

by experimental, survey, longitudinal and correlational studies; design and reporting of original investigations; bibliographic experience.

203. Social Foundations of Education.

(4) I, II, III. Mr. Phillips, Mr. Seefeld

This survey provides both an historical and comparative perspective on contemporary social and philosophical issues as they relate to educational decision making.

205. Comparative Education. (3) III.

Mr. Thomas

Analyses of the role of education in developing nations; a study of educational problems and attempted solutions in societies of Asia, Africa, Central and South America, and the Pacific Islands.

209A. Learning Abilities of Young Children.

(4) I. Mr. Wilson

Prerequisite: Consent of instructor.

Based on readings in Piaget, Kendler and Kendler, Guilford, Wilson and Robeck, and the analysis of assumptions implicit in children's toys such as creative playthings. Seminar and research-oriented field work.

209B. Theories of Child Development.

(4) II. Mr. Thomas

Analyses of characteristics of various theories of child development, their underlying assumptions, and research evidence that bears upon the theories' likely validity.

210. Theories of Learning. (3) II. Mr. Wilson

Prerequisites: Graduate standing, Education 212 or equivalent and consent of instructor.

Analysis and critical study of theories and models of human learning, review and evaluation of current literature on the learning process, and examination of the concept of the teaching-learning process.

211. Psychological Foundations of Education in the Elementary School.

(3) I, II.

Mr. Thomas

Prerequisites: Graduate standing and consent of the instructor.

Interdisciplinary approaches to theory and research on student behavior.

212. Psychological Foundations of Education.

(5) I, II, III.

Mr. Block, Mr. Cotton

Prerequisite: Psychology 1 or 101.

A study of the nature and dynamics of human behavior. Emphasis is placed upon the application of psychological principles to the educative process, personality development and assessment.

213. Diagnosing Learning Difficulties.

(4) III.

Mr. Thomas

Prerequisite: Admission to Master of Arts in Education or Master of Education program.

Factors which may cause learning difficulties are analyzed, methods of evaluating these factors in the classroom and clinic are described, and solutions for the difficulties are proposed.

214A. Advanced Educational Statistics.

(4) II.

Mr. Harris

Prerequisite: Ed 114.

This course will deal with the following topics: review of interval estimation and hypothesis testing; one-way fixed analysis of variance; two-way fixed effects analysis of variance; principles of fixed-effect design; bivariate distributions, simple correlation, and simple regression; and binomial distributions.

214B. Advanced Educational Statistics.

(4) III.

Mr. Harris

Prerequisite: Ed 214A.

This course will deal with the following topics: random and mixed anova designs, repeated measures anova designs, nonparametric procedures, analysis of covariance (in relation to randomized block designs), and multiple regression and correlation.

215. Curriculum Theory and Dynamics.

Mrs. McAda

Prerequisite: Admission to Master of Arts in Education program.

Curriculum theory and research are applied to the analysis of classroom teaching. Particular emphasis is placed on recent studies of the structure of subject matter, advances in educational media, and research and clinical reports on interpersonal functioning in the classroom.

217. Gestalt Learning Theory. (5) II.

Mr. Shapiro

Prerequisites: Graduate standing and consent of instructor.

The theory and principles of Gestalt Therapy as applied to an educational context. Experiential participation in a training experience.

*218A-B. Factor Analysis. (4-4) I, II.

Mr. Harris

Methods of component and factor analysis as applied to test batteries, demographic variables, etc. Theory and contributions of Hotelling, Spearman, Thurstone, Guttman, Lawley, Rao, Jöreskog, and

others. Problems of communality estimation, number of factors, and rotations will be considered.

219. The Evaluation of Student Learning I.

(4) I.

Mr. Block

Prerequisites: Consent of instructor and graduate standing.

An introduction to the theory of student evaluation and the construction of summative, norm-referenced achievement tests.

220. The Evaluation of Student Learning II.

(4) II.

Mr. Block

Prerequisites: Ed. 219; consent of instructor.

An excursion into contemporary test theory. Topics: formative placement and diagnostic evaluation. Criterion-referenced testing; the problem of setting performance standards; the development of integrated student evaluation systems.

225. Social Foundations of Education in the Elementary School. (3) I, II.

Mr. Seefeld
Prerequisites: Graduate standing and consent of instructor.

Interdisciplinary approaches to theory and research on the school as a social institution.

226A-B-C. Early Childhood Learning

Laboratory. (4-10) I, II, III.

Mr. Wilson
Prerequisites: Permission of instructor. Enrollment in Early Childhood Program.

Individualized study of theory and methodology related to early childhood learning.

230. Developmental and Remedial Reading.

(3) SS.

Mr. Bortnick

Prerequisite: Consent of instructor.

A course for the classroom teacher and the specialized reading teacher, emphasizing practical, innovative techniques in the reading program.

231. Developmental and Remedial Reading

Laboratory. (3) SS.

Mr. Bortnick

Prerequisite: Consent of instructor.

To be taken concurrently with Ed. 230.

232. Clinical, Diagnostic and Developmental Reading. (3) III.

Mr. Bortnick

Prerequisites: Teaching experience and consent of instructor.

An advanced course in reading intended for the person organizing and implementing developmental and remedial programs in the schools.

234. Linguistics for Teachers of Reading and English. (3) III.

Mr. Bortnick

Prerequisites: Graduate standing and consent of instructor.

Linguistic theory and its applications to the teaching of reading and English.

238. Children's Literature. (4) ss.

Mr. Bortnick

Prerequisite: Consent of instructor.

Topics include the development of tastes and interests, values and attitudes; standards for the creating of children's literature; bibliotherapy—the problems approach; individualized reading—balancing the diet; interrelationships with total curriculum; experimenting with children's literature.

* Not offered in 1973-74.

240A. The Administrator and Educational**Purpose. (3) II.****Mr. Bridges**

Prerequisite: Consent of instructor.

A systematic consideration of relations between educational purposing and processes of educational decision making. Special emphasis is placed on value-judgmental and factual bases of decision making in education.

240B. The Administrator and Educational**Purpose. (3) I.****Mr. Boyan**

Prerequisite: Consent of instructor. Open to credential candidates.

A systematic consideration of educational alternatives, examined in relation to educational purpose.

241A. Schools—Public Institutions.**(3) I.****Mr. Glasman**

Prerequisite: Consent of instructor.

Educational governance and politics are explored as well as legal and extra legal controls exerted upon schools as public institutions.

241B. Schools—Public Institutions. (3) III.*Mr. Glasman**

Prerequisites: Ed. 241A and consent of instructor.

A systematic examination of governance and politics of education in local, state, national, and international contexts. Emphasis is placed on various processes and mechanisms of politicization of educational governance.

242. Schools—Complex Organizations.**(3) I.****Mr. Bridges**

Prerequisite: Consent of instructor.

Organizational theories are explored and their implication to the structure of schools is analyzed. Consideration is given to organizational variables such as climate, authority, leadership, change, and others.

243. The Principalship. (3) I. Mr. Jamgochian

Prerequisites: Graduate standing and consent of instructor.

The role of the school principal is examined in theoretical and practical contexts. Consideration is given to other administrative positions as well.

244. Organizations and Interpersonal**Relationships. (3) I.****Mr. Shapiro**

Prerequisite: Consent of instructor.

A study of leader behavior in a school context. Social interaction and authority relationships are explored.

245A. School Finance. (3) I. Mr. Winkler

Prerequisite: Consent of instructor.

An introduction to the finance of education at the school, district, county, state, and federal levels. Emphasis will be given to the economic foundations of school financing.

245B. Introduction to Economics of**Education. (3) II.****Mr. Winkler**

Prerequisite: Consent of instructor.

An analysis of the literature related to economics of education.

245C. Resource Allocation in Education.**(3) III.****Mr. Winkler**

Prerequisite: Ed. 245B.

Application of micro economic theories and econometrics to resource allocation in education.

246A. Evaluation of School Programs.**(3) II.****Mr. Glasman**

Prerequisite: Consent of instructor.

Evaluation is examined as an administrative function. Emphasis is on evaluation practices, research methodology uses in evaluation, and the integration of educational evaluation within the context of educational planning. Evaluation methods are explored such as cost effectiveness, PPBS, and others.

246B. Evaluation of School Personnel.**(3) III.****Mr. Glasman**

Prerequisites: Ed. 246A and consent of instructor.

Theories and practices of personnel evaluation are explored. Emphasis is placed on personnel behavior and characteristics and their possible correlations with student achievement. Evaluation results are viewed as inputs for administrative decision making.

247A. Seminar in Problems of Administration.**(3) III.****Mr. Bridges**

Prerequisite: Consent of instructor.

Current specific problems relating to the administration of school programs are selected for analysis through the application of theory and research in organizational behavior.

247B. Introduction to Educational Planning.*(3) I.****The Staff**

Prerequisites: Ed 247A and consent of instructor.

An analysis of the literature of educational planning with consideration of large metropolitan, state, national, and international dimensions.

247C. Advanced Educational Planning.*(3) III.****The Staff**

Prerequisites: Ed. 247B and consent of instructor.

Consideration and use of pertinent planning tools in and for educational systems and sub-systems. Emphasis will be given to systems analysis, operations research, PPBS, PERT, and CPM.

249A-B-C. Practicum—Educational**Administration. (3-3-3) I, II, III.****Mr. Jamgochian**

Prerequisite: Consent of instructor.

Field experience, discussions with school administrators and simulated activities will be utilized to maximize understanding of the "work world" of school administrators.

251. Introduction to Self-Science Education.**(2-4) I.****Mr. Phillips**

Prerequisite: Permission of the instructor.

Experiential learning opportunities and the presentation of theoretical models are combined to help students acquire the tools, skills, and methodologies of the self-scientist. Specific emphasis is placed on classroom applications.

* Not offered 1973-74.

258A. Seminar in Curriculum: Reading.

(3) I. Mr. Bortnick

Prerequisites: Basic procedures course in the area of specialization; a minimum of one year of teaching experience; consent of the instructor.

Recent developments, review and evaluation of current research in curriculum.

258E. Seminar in Curriculum: Social**Studies. (3)** Mr. Copeland

Prerequisites: Basic procedures course in social studies; a minimum of one year of teaching experience; consent of the instructor.

Recent trends, issues and problems in the teaching of social studies. Review and evaluation of research in this area. Students will select an emphasis in either the elementary or secondary school level.

260. Seminar: The Creative Process.

(4) I. Mr. Phillips

Prerequisites: Graduate standing and consent of the instructor.

A discussion of the research on and theories of creativity. Emphasis will be on psychological process rather than on creative productivity. Major foci will be on descriptive studies of the creative person and contributions to the methodology of creative growth.

261A. Encounter Group Leadership. (4) I.

Mr. Shapiro

Prerequisite: Consent of instructor.

An introduction to training leaders in theory and practice of facilitating small face-to-face groups. Course will cover goals and purposes of encounter groups, T-Groups, sensitivity training, etc. with emphasis on skill in group process.

261B. The Dynamics of Planned Change.

(4) III. Mr. Shapiro

Prerequisite: Consent of instructor.

Examination of role of change agents to various client systems with exploration of theories of social change, providing theoretical framework from which to understand systemic problems of individuals and groups. Development of skills of consultants to various social systems.

261C. Human Relations in Education. (4) III.

Mr. Shapiro

Prerequisite: Consent of instructor.

Application of technology of change agency, group dynamics and encounter groups or T-Groups to educational systems. Survey of educational institutions and study of human relations procedures available for improvement. Development of "design" capacities in planning human relations programs.

262A. Systematic Training in Counseling**Strategies: Observing and Recording****Behavior. (1) I, II, III.** Mr. Atkinson,

Mr. Hosford, Mr. Zimmer

Prerequisite: Admission to the Counseling Psychology Program.

Laboratory course designed to help individuals learn to observe and record data pertaining to individual and group as well as institutional patterns which affect behavior of the individual. Student performance must meet specified levels of competency to pass the course.

262B. Systematic Training in Counseling Strategies: Interpreting Behavior.

(1) II, III.

Mr. Atkinson,

Mr. Hosford, Mr. Zimmer

Prerequisite: Admission to the Counseling Psychology Program.

This laboratory course is designed to help students learn to interpret data gained through observations which allow them to put causal relationships into perspective. Student performance must meet specified levels of competency to pass the course.

262C. Systematic Training in Counseling Strategies: Modifying Behavior.

(1) II, III.

Mr. Atkinson,

Mr. Hosford, Mr. Zimmer

Prerequisite: Admission to the Counseling Psychology Program.

This laboratory course is designed to help students develop and employ strategies that allow them to change some aspect of the individual, group or institution in a manner that directly results in modification of the individual.

262D. Systematic Training in Counseling**Strategies: Evaluating Behavior Change.**

(1) II, III.

Mr. Atkinson,

Mr. Hosford, Mr. Zimmer

Prerequisite: Admission to the Counseling Psychology Program.

This laboratory course is designed to help students develop and test feedback and research strategies to determine the effectiveness of various modification strategies employed in the counseling process. Student performance must meet specified levels of competency to pass the course.

263A-B. Counseling Techniques: Behavior Modification. (3-3) I, II.

Mr. Atkinson, Mr. Hosford

Prerequisite: Consent of instructor or admission to the Counseling Psychology Program.

Course is designed to help counselors and teachers gain understanding and practice in using behavioral counseling techniques. Instruction covers historical development, present status of behavior modification, and specific techniques (operant procedures, desensitization, behavior rehearsal, social modeling, assertive training) for modifying behavior.

264. Counseling Techniques: Eclectic.

(3) III.

Mr. Zimmer

Prerequisite: Consent of instructor or admission to the Counseling Psychology Program.

Students are given an opportunity to become acquainted with various counseling techniques and their potential effects on counselees. Through systematic exposure to techniques, students will develop an integrated style of counseling that relates to counselees' goals and history of maturation.

265. Fieldwork in Counseling and**Concurrent Seminar. (3) I, II, III, SS.**

Mr. Atkinson, Mr. Hosford, Mr. Zimmer

Prerequisites: Consent of instructor and enrollment in the Counseling Psychology Program.

Intensive supervised fieldwork in counseling. A minimum of one full day in an approved practicum

setting plus individual and group supervision at the University are required.

266A-B-C. Psychological Testing in

Education. (3-3-3) III. Mr. Hosford

Prerequisites: Consent of instructor and enrollment in Master of Education (Counseling Psychology) Program.

An intensive study of human development and personality dynamics in terms of their assessment through clinical instruments and techniques. Students will learn to choose, administer, and utilize data from techniques commonly used by school psychologists and college counseling centers. (Yearlong, weekly classes and practicum, plus supervised application in the fieldwork setting.)

267. Group Dynamics and Their Applications in Education. (3) II.

Mr. Shapiro

Prerequisites: Consent of instructor and enrollment in Master of Education (Counseling Psychology) Program.

Participation in a training group followed by an examination of school applications for group procedures.

268. Advanced Fieldwork in Counseling.

(3) I, II, III, SS.

Mr. Atkinson,

Mr. Hosford, Mr. Zimmer

Prerequisites: Consent of instructor and 9 units of Ed. 265 Fieldwork in Counseling and Concurrent Seminar.

Advanced supervised fieldwork in counseling. A minimum of one full day in an approved practicum setting plus individual and group supervision at the University are required.

275. Counseling Theories: Seminar. (3) I.

Mr. Zimmer

Prerequisites: Consent of instructor and enrollment in Master of Education (Counseling Psychology) Program.

A critical examination of modern theories of counseling, plus intensive supervision of counseling practice.

276. Research in Counseling Practices:

Seminar. (2) II.

Mr. Zimmer

Prerequisites: Consent of instructor and enrollment in Master of Education (Counseling Psychology) Program.

Examination of problems in various counseling applications, recent theoretical developments. Continuation of group and individual supervision.

277. Specialized Counseling: Seminar.

(2) I, II, III, SS.

Mr. Atkinson, Mr. Hosford, Mr. Zimmer

Prerequisites: Consent of instructor and/or enrollment in Ph.D. (Counseling Psychology) Program.

An examination of the diverse contexts in which counseling practices are relevant, plus their effects upon theory and techniques. Continuation of supervision.

282. Instructional Strategies in Confluent

Education. (4) II.

Mr. Phillips

Prerequisites: Ed. 217, 260, and 261A.

The development of pedagogical structures based

on the behavioral sciences and laboratory experiences in prerequisite course work directed toward individual and group learning experience in the classroom. Emphasis will be on the integration of the affective and cognitive domains.

283. Curriculum Design in Confluent

Education. (4) III.

Mr. Phillips

Prerequisites: Ed. 217, 260, 261A, and 282.

Systematic study of curriculum design, the structure of disciplines, potential affective components and their relationship to intellectual functioning within an idiosyncratic as well as nomothetic context. Directed toward the application of confluent principles of education to classroom and departmental curricula.

284. Philosophical Dimensions of Confluent

Instruction. (4) I.

Mr. Phillips

Prerequisites: Enrollment in M.A. in Education (Confluent Program) and consent of instructor.

Consideration of values, ethics, definitions of reality to help student clarify and refine his philosophical framework for teaching, as well as understand underlying philosophical principles for education in general. Attention given to special problems of confluent curriculum and teaching methodology.

285A. Community College—Professional

Preparation. (3) I.

Mr. Seefeld

Prerequisite: Students completing advanced degrees who plan to teach in two-year community colleges.

Development, governance and purposes of the community college: a survey of administration, control, financing, curriculum, faculty and students.

285B. Community College—Professional

(1-2) I, II, III.

The Staff

Prerequisites: Consent of instructor; enrollment in or completion of 285A.

Students will be assigned intern teaching and their responsibilities at the Santa Barbara City College.

*286. Visual Media in the Confluent

Curriculum. (3).

Mr. Phillips

Prerequisite: Consent of the instructor.

An examination of varied uses of visual media in the classroom. Emphasis is on classroom environmental enrichment and facilitation of learning through the integration of films with the traditional disciplines. Attention is given to the affective domain and student film-making.

295A-B-C-D-E-F. Seminar in Educational

Psychology. (4-4-4-4-4) I, II, III.

Mr. Block, Mr. Cotton,

Mr. Harris, Mr. Thomas, Mr. Wilson

Prerequisite: Admission to Ph.D. Program.

A. Affective Processes, B. Developmental Processes, C. Cognitive Learning, D. Measurement and Mathematical Models of Education, E. Structure of Intellect, F. Psychological Base for Modern Instructional Procedures.

Sections A-F are given as separate units and may be taken more than once by a student with the consent of the instructor.

* Not offered 1973-74.

Teaching Procedures, Curriculum and Instructional Material (390 and 391 Series). All 390 and 391 offerings are courses in procedures, curriculum and instructional materials in specialized fields.

Standard Secondary Credential candidates are required to take one course in their major and one course in their minor, if they have specified a minor.

Standard Elementary Credential candidates must enroll in 391 courses as described in that program.

ECE 390. Procedures, Curriculum, Instructional Materials and Foundations for Teaching in Early Childhood Programs. (10) I, II, III. The Staff

Prerequisites: Permission of instructor. Enrollment in Early Childhood Program.

Designed for teachers in training.

R 390. Procedures, Curriculum, and Instructional Materials Used in the Teaching of Reading at Secondary Level. (1-2) I, II, III. The Staff

Prerequisite: Admission to the secondary credential program.

Application of research and theory to procedures in the teaching of reading through problem solving situations, inductive reasoning and discovery, adapting instruction to individual reading needs.

SF 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of French. (3) I. Mr. Arce

Prerequisite: Major or minor in French.

Required of candidates for the secondary credential with a major or minor in French.

SM 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Math in the Secondary School. (3) I. Mr. Cotter

Prerequisite: Major or minor in mathematics.

Designed for teachers in training.

SN 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Spanish. (3) I. Mr. Arce

Prerequisite: Major or minor in Spanish.

Methodology of foreign language teaching with particular application to Spanish.

SS 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Social Studies. (3) I, II.

Mr. Copeland

Prerequisites: Graduate standing. Major in anthropology, economics, history, political science, sociology, or combination social sciences.

This course is required of candidates for the secondary credential with a major or minor in one of the named social sciences.

SST 390. Procedures for Teaching Science in the Secondary School. (3) I, II.

Mrs. McAda

Prerequisite: Major or minor in biology, chemistry, physics, or geology.

Lecture-discussion sessions considering secondary-school science curriculum materials and the objectives and teaching strategies appropriate to these materials.

EL 391A. Teaching Procedures, Curriculum, and Instructional Materials Used in the Teaching of Mathematics in the Elementary Schools. (1-2) I, II.

Mr. Cotter

Prerequisites: Graduate standing and enrollment in the graduate elementary credential program.

The application of research and theory to classroom practice in the teaching of mathematics.

EL 391B. Teaching Procedures, Curriculum, and Instructional Materials Used in the Teaching of Science in the Elementary Schools. (1-2) I, II. Mrs. McAda

Prerequisites: Graduate standing and enrollment in the graduate elementary credential program.

The application of research and theory to classroom practice in the teaching of science.

EL 391C. Teaching Procedures, Curriculum, and Instructional Materials Used in the Teaching of Social Studies in the Elementary Schools. (1-2) I, II.

Mr. Copeland

Prerequisites: Graduate standing and enrollment in the graduate elementary credential program.

The application of research and theory to classroom practice in the teaching of social studies.

EL 391D. Procedures, Curriculum, and Instructional Materials Used in the Teaching of Reading and Language Arts in the Elementary Schools. (1-2) I, II.

Mr. Bortnick

Prerequisites: Graduate standing and enrollment in the graduate elementary credential program.

Application of research and theory to classroom practice in the teaching of reading and language arts through problem solving situations, inductive reasoning and discovery, adapting instruction to individual reading needs.

Supervised Teaching (392 Series)

Prerequisite: Admission to a teaching credential program at UCSB. The 391, 392, and 393 series may be repeated.

Note: This is an extra-session course which is scheduled to coincide with the calendar of the public schools.

ECE 392. Student Teaching: Early Childhood Education. (4) I, II, III.

The Staff

Prerequisites: Permission of instructor. Enrollment in Early Childhood Program.

Supervised teaching.

EL 392. Supervised Teaching: Elementary Schools. (3-12) I, II, III.

Mrs. Cogan, Mr. Romo

Prerequisites: Graduate standing; Education EL 391A-B-C-D taken concurrently.
Supervised teaching.

I 392A-B-C-D. Supervised Internship Teaching. (4-4-4-4) I, II, III.

Mr. Jamgochian

Prerequisite: Admission to a teacher internship program in the Graduate School of Education.

Internship teaching under joint supervision of the University and public school personnel.

S 392. Student Teaching: Secondary Education. (3-6) I, II, III. The Staff

Prerequisites: Admission to secondary credential program and consent of instructor.

Supervised teaching at the secondary level.

SF 392. Student Teaching: French.

(3-6) I, II, III.

Mrs. Metz

Prerequisite: Admission to secondary credential program and consent of instructor.

Supervised teaching at the secondary level in French.

SM 392. Student Teaching: Mathematics.

(3-6) I, II, III.

The Staff

Prerequisite: Admission to secondary credential program in mathematics.

Supervised teaching at the secondary level in mathematics.

SN 392. Student Teaching: Spanish.

(3-6) I, II, III.

Mr. Arce

Prerequisite: Admission to secondary credential program in Spanish.

Supervised teaching at the secondary level in Spanish.

SS 392. Student Teaching: Social Studies.

(3-6) I, II, III.

The Staff

Prerequisite: Admission to secondary credential program in social studies.

Supervised teaching at the secondary level in social studies.

SST 392. Supervised Teaching: Science

Education. (3-6) I, II, III. Mrs. McAda

Prerequisite: Admission to secondary credential program in science.

Supervised teaching at the secondary level in science.

Problems (393 Series)

Education 393 to be required at the option of the instructor who teaches the concurrent 392 course.

EL 393. Seminar in Student Teaching:

Elementary. (1) I, II, III.

Mrs. Cogan, Mr. Romo

Prerequisites: Graduate standing. Concurrent enrollment in Education EL 392.

Problems of teaching identified during field experience in student teaching.

SF 393. Problems Seminar in the Teaching of French. (1) I, II, III. Mrs. Metz

Prerequisite: Taken concurrently with supervised teaching in French.

Discussion of problems in the teaching of French.

SM 393. Problems Seminar in the Teaching of Mathematics. (1) I, II, III. The Staff

Prerequisite: Taken concurrently with supervised teaching in mathematics.

Discussion of problems in the teaching of mathematics.

SN 393. Problems Seminar in the Teaching of Spanish. (1) I, II, III. Mr. Arce

Prerequisite: Taken concurrently with supervised teaching in Spanish.

Discussion of problems in the teaching of Spanish.

SS 393. Problems Seminar in the Teaching of Social Studies. (1) I, II, III. The Staff

Prerequisite: Taken concurrently with supervised teaching in social studies.

Discussion of problems in the teaching of social studies.

SST 393. Problems Seminar in the Teaching of Science. (1) I, II, III. Mrs. McAda

Prerequisite: Taken concurrently with supervised teaching in science.

Discussion of problems in the teaching of science.

Advanced Study and Research Courses
(594-599 Series)

The 594-599 series of courses are for advanced study and/or research. Letter designations appearing after the course number refer to the area of specialty as follows:

CE	Confluent Education
CP	Counseling Psychology
EP	Educational Psychology
EX	Executive Program
IE	International Education
LA	Reading and Language Arts
ME	Mathematics Education

594CE. Special Topics. (1-4) I, II, III.

Mr. Brown, Mr. Jamgochian,

Mr. Phillips, Mr. Shapiro

Prerequisites: Consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594CP. Special Topics. (1-4) I, II, III, SS.

Mr. Atkinson, Mr. Hosford,

Mr. Shapiro, Mr. Zimmer

Prerequisites: Enrollment in the counseling program and consent of instructor.

Special seminar will deal with an investigation of contemporary issues and problems in the field of counseling topics such as successful and unsuccessful intervention procedures used in counseling clients with drug problems.

594EP. Special Topics. (1-4) I, II, III.

Mr. Cotton

Prerequisite: Consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

594EX. Special Topics. (1-4) II.

Mr. Boyan, Mr. Bridges,

Mr. Glasman, Mr. Jamgochian

Prerequisite: Admission to the Educational Executive Doctoral Program.

594IE. Special Topics. (1-4) I, II, III.

Mr. Thomas

Prerequisite: Consent of instructor. May be repeated for maximum of eight units.

Special seminars devoted to reviews of research and to pursuit of research and/or scholarly interests in selected fields. For graduate students in master's or doctoral degree programs.

595. Group Studies. (4) I, II, III.

The Staff

Prerequisite: Consent of instructor.

Critical review of research in doctoral and master's degree sub-program special fields.

596CE. Directed Reading and Research.

(2-4) I, II, III.

Mr. Brown,

Mr. Jamgochian, Mr. Phillips,

Mr. Shapiro

Prerequisite: Consent of instructor. May be repeated for maximum of four units by master's degree Plan I candidates, for maximum of six units by master's degree Plan II candidates, for maximum of eight units by doctoral candidates.

Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential candidates by petition.

596CP. Directed Reading and Research.

(2-6) I, II, III, SS.

Mr. Atkinson,

Mr. Hosford, Mr. Shapiro, Mr. Zimmer

Prerequisites: Graduate standing, enrollment in the counseling program, and consent of instructor.

Independent research and/or reading in counseling in areas not covered by courses offered.

596EP. Directed Reading and Research.

(2-4) I, II, III.

Mr. Block, Mr. Cotton,

Mr. Harris, Mr. Thomas, Mr. Wilson

Prerequisite: Consent of instructor. May be repeated for maximum of four units by master's degree Plan I candidates, for maximum of six units by master's degree Plan II candidates, for maximum of 36 units by doctoral candidates.

Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or doctoral degree programs. Open to credential candidates by petition.

596EX. Directed Reading and Research.

(2-4) I, II, III.

Mr. Boyan, Mr. Bridges,

Mr. Glasman, Mr. Jamgochian

Individual tutorial and/or laboratory participation in special fields. For graduate students in master's or

doctoral degree programs. Open to credential students by petition.

596LA. Directed Reading and Research in Reading and Language Arts.

(2-4) I, II, III, SS.

Mr. Bortnick

Prerequisite: Consent of instructor.

Individual tutorial in directed reading and the review of pertinent research on special topics in relation to elementary reading and/or language arts.

596ME. Directed Reading and Research.

(2-5) I, II, III, SS.

Mr. Cotter

Prerequisite: B.A. in mathematics or equivalent.

Directed reading and the planning and design of research in mathematical education.

597CE. Individual Study for Comprehensive Examinations. (2-12) I, II, III.

Mr. Brown, Mr. Shapiro

Prerequisite: Consent of instructor.

Preparation for master's or Ph.D. comprehensive examinations in confluent education.

597CP. Individual Study for Comprehensive Examinations. (2-12) I, II, III, SS.

Mr. Atkinson, Mr. Hosford, Mr. Shapiro,

Mr. Zimmer

Prerequisites: Completion of 24 graduate units in the counseling program for master's students; completion of 36 graduate units in the counseling program for Ph.D. students.

Preparation for master's degree comprehensives or doctoral examinations. Contracts to be worked out with student's major professor.

597EP. Individual Study for Comprehensive Examinations. (2-12) I, II, III.

Mr. Block, Mr. Cotton, Mr. Harris,

Mr. Thomas, Mr. Wilson

Prerequisite: Consent of instructor.

Preparation for master's or Ph.D. comprehensive examinations in educational psychology.

597ME. Individual Study for Comprehensive Examinations.

(2) I, II, III, SS.

Mr. Cotter

Prerequisite: Admission to the M.A. program in Mathematics Education.

Individual study for M.A. comprehensive examinations in the field of mathematics education.

598EP. Master's Thesis Research and Preparation. (2-12) I, II, III.

Mr. Block, Mr. Cotton, Mr. Harris,

Mr. Thomas, Mr. Wilson

Prerequisite: Consent of instructor.

Supervised research and writing of the thesis in master's degree for educational psychology.

598ME. Master's Thesis Research and Preparation. (3-5) I, II, III, SS.

Mr. Cotter

Prerequisite: Admission to the M.A. program in Mathematics Education.

Research underlying the implementation and the writing of M.A. thesis.

599CE. Ph.D. Dissertation Preparation.

(2-12) I, II, III. Mr. Brown, Mr. Shapiro

Prerequisite: Consent of instructor.

Writing of dissertation in doctoral degree program in confluent education.

599CP. Ph.D. Dissertation Preparation.

(2-12) I, II, III, SS.

Mr. Atkinson, Mr. Hosford,

Mr. Shapiro, Mr. Zimmer

Prerequisite: Completion of doctoral qualifying exams.

Writing the dissertation for doctoral degree in Counseling Psychology Program.

599EP. Ph.D. Dissertation Preparation.

(2-12) I, II, III. Mr. Block, Mr. Cotton,

Mr. Harris, Mr. Thomas, Mr. Wilson

Prerequisite: Consent of instructor.

Writing of dissertation for doctoral degree program in educational psychology.

599EX. Ph.D. Dissertation Preparation.

(2-12) I, II, III.

Mr. Boyan,

Mr. Bridges, Mr. Glasman

Prerequisite: Consent of instructor.

Writing of dissertation for doctoral degree in Educational Executive Program.

 EDUCATION ABROAD PROGRAMWilliam H. Allaway, *Director*.Robert H. Billigmeier, *Associate Director*.Gloria Blakemore, *Assistant Director*.Jose R. Fulco, *Associate Director*.Chauncey S. Goodrich, *Associate Director*.James D. Kline, *Associate Director*.Hallam C. Shorrock, Jr., *Associate Director*.Stanley D. Krebs, *Campus Coordinator*.Brian W. Selander, *Academic Counselor*.**STUDY CENTER STAFF, 1973-74**Dorothy Yaqub, B.A., *Liaison Officer—Administration, Beirut Study Center*.Fawzi Yaqub, Ph.D., *Liaison Officer—Academic Affairs, Beirut Study Center*.Frederic Meyers, Ph.D., *Director, Bordeaux Study Center*.Michael Gordon, Ph.D., *Associate Director, Bordeaux Study Center*.Howard W. Clarke, Ph.D., *Director, Goettingen Study Center*.Barry McLaughlin, Ph.D., *Associate Director, Goettingen Study Center*.Clifford H. MacFadden, Ph.D., *Director, Hong Kong Study Center*.Earl J. Rand, Ph.D., *Associate Director, Hong Kong Study Center*.William Brinner, Ph.D., *Director, Jerusalem Study Center*.Benjamin N. Akpati, Ph.D., *Liaison Officer, Legon-Accra Study Center*.Claudio Guillen, Ph.D., *Director, Madrid Study Center*.Antonio Sanchez-Romeralo, Ph.D., *Associate Director, Madrid Study Center*.Hugo Rodriguez Alcala, Ph.D., *Director, Mexico City Study Center*.Philip W. Bell, Ph.D., *Liaison Officer, Nairobi Study Center*.Jackson V. Burgess, M.F.A., *Director Padua Study Center*.Paul B. Augst, Ph.D., *Director, Paris Study Center*.Erik Wahlgren, Ph.D., *Director, Scandinavian Study Center (Bergen, Lund.)*Arthur G. Sylvester, Ph.D., *Associate Director, Scandinavian Study Center (Bergen).*———, *Director, Mitaka-Tokyo Study Center*.David Blackwell, Ph.D., *Director, United Kingdom and Ireland Study Center*.James L. Jarrett, Ph.D., *Associate Director, United Kingdom and Ireland Study Center*.

Administered for the University of California by the Santa Barbara campus, the Education Abroad Program is now entering its thirteenth year of operation. Study Centers have been established in France, Germany, Ghana, Hong Kong, Israel, Italy, Japan, Kenya, Lebanon, Norway, Spain, Sweden, and the United Kingdom and Ireland. Special programs for students preparing for a career in teaching Spanish and French in secondary schools have been established in Mexico City and in Paris.

PURPOSE

The Education Abroad Program was originally designed to give mature, highly motivated, and academically superior upper division students from all UC campuses rich experience in

a new cultural milieu as a part of their normal undergraduate program. Somewhat later, a graduate dimension was added which has now made a significant contribution in assisting a small number of selected students in their programs toward advanced degrees.

The Program stimulates the intellectual development of the participants, broadening the general education of all and giving a new depth to the particular academic interests of some. Most gain fluency in a language other than their own, and all grow in their ability to engage in independent study. Perhaps most valuable of all are increased self-understanding, clarified life purposes, and a broadening and deepening of personal values.

One of the most distinctive features of the Program is the emphasis placed on the full integration of the UC students into the life of the host university. For the most part, UC students abroad live as do the students of the host university, attend the same classes, take courses from the same professors, and take part in local social and cultural activities. As an aid in facilitating UC student adjustment to unfamiliar educational practices, tutorials are included within the curriculum of most of the Study Centers, supplementing the regular academic offerings of the host university.

THE ACADEMIC PROGRAM

The academic program of each student includes: (1) a preparatory course in the language of the country (except for the Hong Kong, Lebanon, Africa, and United Kingdom and Ireland programs); (2) a full academic year of credit courses (except for the graduate programs in Mexico City and Paris); and (3) a wide-ranging opportunity to audit courses, either in the student's special field of interest or in new fields he wishes to explore.

In order to assist students to adjust to different academic requirements of the host university and to provide a link to American university practices, many courses taken by UC students are supplemented by tutorials. The tutorials are conducted by graduate students or junior staff of the host university, who help UC students to resolve language difficulties, provide cultural background presupposed by the lectures, give opportunities for questioning and discussion, and supplement the lectures by reading assignments, papers and evaluation of progress.

Each student is concurrently enrolled on his home campus of the University of California and at the host university. Full academic credit is received for courses satisfactorily completed. The selection of courses is such that, by advance planning and wise choice, most students can make normal progress toward graduation. Some students fulfill some general education requirements.

ACADEMIC PLANNING AND ADVISING

A participant who wishes to make normal progress toward graduation should counsel *in advance* with his departmental adviser and the dean of his school or college in order to ascertain how participation will affect his academic program. In the following pages, entries are provided for each of the Study Centers, listing the major departments of study. Individual courses presently approved for UC credit are not listed here but may be consulted in the *EAP Advisers' Manual* in the EAP Campus Coordinator's office (1131 South Hall) and in EAP departmental advisers' offices. Since offerings at the host universities may change rapidly, the listings in the Manual represent some of the courses UC students have taken in the past. Many of the same or similar courses will be available in future years, but the student should plan a program that is sufficiently flexible to allow him to take alternate courses. Each year new courses are added to a Center's approved offerings as needed by UC students attending and as available at the host university. Although courses approved by the University of California carry full credit, each department retains the right to determine the extent to which it will accept units so earned in the fulfillment of the requirements for its own majors.

Normally, students apply for admission to the Program during the fall quarter of their sophomore year. However, a limited number of students are accepted each year to participate as seniors and as graduate students. Such a student should make inquiry of the dean of his college as well as with his academic advisers concerning residence requirements in order to learn in what way participation will affect graduation or graduate status.

In order to facilitate the academic work of the students, University of California professors

serve as Directors and Associate Directors of the Study Centers. They work with their counterparts in the host university in developing the academic program and advise students on any problem pertaining to their work. In addition, the Directors are responsible for all aspects of student welfare and conduct.

SELECTION

Participants are chosen on each campus by a faculty committee appointed by the Chancellor. Basic requirements are: upper division standing in the University at time of participation, two years of university-level work in the language of the country with a B average (with some exceptions) and an over-all B average. In addition to academic criteria for selection, the faculty committee attaches much importance to indications of the student's seriousness of purpose, maturity, and the capacity to adapt to the experience of study abroad. As part of the screening process, students are required to consult with their adviser and to obtain clearance from the University's Student Health Service.

With the exception of students from California junior colleges, transfer students are eligible if they have completed at least one quarter in the University of California at the time of selection (not applicable for graduate students for Mexico City and Paris). California junior college students may apply for the Education Abroad Program prior to their active enrollment in a campus of the University of California, but only under certain conditions. Such students, considered during their sophomore year, must compete with UC students on the campus on which application for admission is being processed. If selected for EAP, a junior college transfer student must have been clearly admitted to UCSB prior to departure for the Program.

STUDENT CONDUCT AND PARENTAL APPROVAL

It is anticipated that the students selected for the Education Abroad Program will be of high caliber, committed to profiting from both the intellectual and social aspects of the experience. Since they will be guests in another country and another university, their conduct will reflect on both the University of California and the United States. Students participating in the Education Abroad Program are responsible to the Director of the Center, to the Director of the EAP, to the faculty of the University of California, and to the faculty members of the host university who are related to the Program. The Director of the EAP reserves the right to terminate the participation in the Program of any student whose conduct (in either academic or non-academic matters), after careful consideration and full review, is judged to be contrary to the standards and regulations of the host university.

Participation in the Program by a minor student must be approved by his parents or guardian. In approving such participation, parents and guardians should be aware that a greater degree of personal freedom is inherent in the foreign university and that the University of California cannot take responsibility for supervising closely the activities of individual students. The Directors of the Centers will be available to students with problems and will maintain close contact with the student group as a whole. The University provides for comprehensive medical and hospitalization coverage for all participants.

COST AND FINANCIAL AID

The Regents endeavor to bring the Program within the reach of all students, regardless of their financial resources. In most instances, participants may take their University scholarships with them. The NDEA and Regents' loan fund are also available. Costs range between \$3352 and \$4983 for the year programs (including tuition, room and board, round-trip transportation, books, health and accident insurance, some travel, and about \$60 per month for personal expenses). For the future teachers' programs (two quarters), costs range between \$1952 and \$2113. Prospective participants who require financial assistance should counsel early with the Dean of Financial Aids.

OTHER ARRANGEMENTS

The Education Abroad Program arranges transportation to the various Study Centers and will assist in finding inexpensive transportation back to the United States at a time and by

a means of the student's choosing. In most Study Centers a variety of housing facilities is available, including residence halls and private dwellings.

Application forms for admission to the Program are available in the EAP office and are given to students following a discussion of various aspects of the Program with the EAP Academic Counselor. Completed applications are due in the EAP office by January 11, 1974 (November 16, 1973 for the United Kingdom and Ireland and the second two-quarter session of the Paris program). All further information, such as course offerings, selection, orientation, withdrawal from the Program after selection, schedules of departures and payment of fees may be obtained from the EAP Academic Counselor or Coordinator at 1131 South Hall.

THE AFRICAN STUDY CENTERS

The University of Nairobi, Kenya

The University of Nairobi admits a limited number of graduate and undergraduate University of California students. Selection is made on the basis of scholarship, field of study, motivation and ability to adapt to an African environment. Study at the University of Nairobi is on the British system; hence students are expected to restrict their course work to their major or area of specialization while in Africa. Course programs are continued through the academic year; thus a study program set up within one discipline during the first term must be continued throughout the three terms the student is enrolled. Examinations are given once, at the end of the academic year (in June) and are mandatory for receiving credit.

Graduates and undergraduates may select courses from offerings in Art and Design, History, English and African Literature, Linguistics, Political Science, and Sociology. Graduate students in History, Political Science, Architecture, Design and Sociology can pursue independent studies in connection with the Institute for Developmental Studies, Institute of African Studies and the Housing and Research Development Unit. Excellent opportunities for research are also available in Veterinary Science.

The University of Ghana, Ghana

The University of Ghana admits a limited number of graduate and undergraduate University of California students. Selection is made on the basis of scholarship, field of specialization, motivation and ability to adapt to an African environment. Study at the University of Ghana is on the British system; hence students are expected to restrict their course work to their major or area of specialization while in Africa. Course programs are continued through the academic year; thus a study program set up within one discipline during the first term must be continued throughout the three terms the student is enrolled. Courses may be selected from offerings in Anthropology, Archaeology, African Area Studies, Astrophysics, Arabic, Biochemistry, Botany, Chemistry, Economics, English, African Geography, Geology, African History, Mathematics, African Music, Philosophy, Physics, Political Science, Psychology, Sociology, Religions, Zoology.

Graduate students may enroll in the Institute of African Studies, the Institute of Adult Education, Institute of Statistical, Social, and Economic Research, School of Administration, and in the Departments of Agricultural Economy and Farm Management, Animal Science, and Crop Science, where they may take courses appropriate to their degrees at the University of Ghana and carry forward their research interests.

Instruction at the University of Ghana is given in English. The study of Twi will be offered on an optional basis during the academic year.

THE BEIRUT STUDY CENTER

Since the American University of Beirut is organized primarily along the lines of an American institution and since classes are small, tutorials are not provided. All courses, with the exception of those involving Arabic language and literature, are taught in English. A

knowledge of Arabic is not required but all students not already fluent will be required to take a brief course in conversational Arabic during the orientation program. By reason of its location, AUB offers excellent opportunities for taking courses concerned with Middle East problems.

The AUB Faculty of Arts and Sciences grants Bachelors degrees in the following subjects: Arabic (language or literature), Archaeology, Art (studio), Biology, Business Administration, Chemistry, Comparative Literature (Arabic, English, French, German), Economics, Education, English (linguistics or literature), Geology, History (European, Middle Eastern, or Ancient), Mathematics, Philosophy, Physics, Political Science, Public Administration, Religious Studies, Sociology (includes Cultural Anthropology), Statistics. The Faculty of Agriculture grants B.S. degrees in General Agriculture, Agricultural Economics and Rural Sociology, Animal Production and Protection, Crop Production and Protection, Food Technology and Nutrition, and Soils and Irrigation.

The Center may be of particular value to graduate students specializing in one of the following fields: Agriculture of Developing Countries, Arabic Language and Literature, Archaeology, Marine Biology, Comparative Education, Teaching of English as a Foreign Language, Development Administration, Linguistic Analysis, Middle East Area Studies (contemporary or historical), Nutrition, Religious Studies, and Tropical Health.

THE BORDEAUX STUDY CENTER

A compulsory intensive language course precedes the beginning of the fall semester at the University of Bordeaux. All courses are taught in French. Tutorials accompany those courses in which more than eight to ten UC students enroll. The Institute of Political Science is especially well known. Science courses are designed for majors only. Students wishing to enroll in Science and Mathematics courses must, in an interview, receive the permission of the instructor in charge of the course. Laboratory space is limited. All foreign language classes are literature courses.

UC students have profitably studied in the following departments: Art History, Biological Sciences, Classics, Economics, French, Geography, Hebrew, History, Mathematics, Philosophy, Political Science, Sociology and Spanish. Some courses that fulfill general education requirements in the humanities are available.

THE GOETTINGEN STUDY CENTER

A compulsory intensive language course precedes the beginning of the fall semester at the George August University. All courses are taught in German. Tutorials supplement courses in which more than five UC students are enrolled. Almost all majors can find courses in their fields, but space for laboratory courses in Biology and Psychology is severely limited. Science majors may be restricted to theory courses.

Departments in which UC students have studied profitably in the past are: Anthropology (cultural and physical), Art, Biological Sciences, Chemistry, Economics, German, History, Linguistics, Mathematics, Modern Languages (French, Spanish, Scandinavian, Slavic Languages), Music, Philosophy, Physics, Political Science, Psychology, Religious Studies, and Sociology. Courses that fulfill general education requirements in the humanities are available.

THE HONG KONG STUDY CENTER

Annually a limited selection of courses is offered in English by the Chinese University of Hong Kong. University of California students have previously studied with profit in the following departments: Art (studio courses, for Mandarin-speakers), Chinese (i.e., Cantonese, Mandarin), Economics (especially Development Economics and History of Economic Thought), English (some basic courses, including Drama, offered by British or American staff members), History, Philosophy and Sociology.

Mandarin is taught under contract at the Yale-in-China Chinese Language Centre. Undergraduates who have already completed 18 units of Chinese language study may elect up to 9 units per term of advanced Chinese. All other undergraduates are required to include

18 units of Chinese in their annual programs, or a number sufficient to raise their overall total to 18 units. Students normally take no more than 9 units of Chinese in any term.

Since there is substantial annual variation in the number and distribution of courses offered in English, and information about them becomes known only one week before instruction begins, there can be no assurance that specific courses will be available.

Advanced graduate students may occasionally arrange for independent study courses under a professor of the host university.

THE JERUSALEM STUDY CENTER

For students not fluent in Hebrew a compulsory intensive summer course in Jerusalem precedes enrollment at the Hebrew University. Instruction at the University is in Hebrew; therefore, students not fluent in Hebrew are limited in their courses. Unless they pass a proficiency examination students are required to continue their study of Hebrew throughout the year. For foreign students a wide variety of courses in the field of Jewish Studies is offered in English in the School for Overseas Students.

Although the curriculum in the Humanities, Social Sciences and Sciences is very broad, laboratory space in the Sciences is limited; therefore, departmental permission is required to take science courses.

In the past, students have profitably studied in the following departments: Archaeology, Art History, Biological Sciences, Chemistry, Classics, Economics, Education, Geography, Hebraic Studies, History (emphasis on History of Jewry, Israel, and Middle East), Islamic Civilization, Linguistics, Mathematics, Philosophy, Political Science, Psychology, Religious Studies, Romance Languages, Russian Studies, Semitic Languages and Sociology.

THE MADRID STUDY CENTER

A compulsory intensive course in Spanish at the University of Madrid precedes the fall semester. All instruction is in Spanish. A core program, organized for the UC Center and other American programs, consists of courses in the following fields: Art History, History of Spain and Spanish America, Spanish Folk Music, Political Science (with special reference to Spain and Latin America), Sociology, Spanish and Spanish American Literature and Linguistics. Since these courses are designed for American students, there is no need for tutorials.

In addition to the core program students can enroll, with the permission of the Director and the appropriate Faculty, in regular courses of the University of Madrid. In the past, students have done so in Anthropology (cultural), Economics, History, Linguistics, and Social Psychology.

THE MEXICO CITY STUDY CENTER

The Study Center in Mexico is associated with the Instituto Nacional de Antropología e Historia and the Museo Nacional de Antropología, and offers a broad introduction to Mexican culture. Courses are conducted in Spanish by Mexican professors, several of whom are also on the staff of the National Autonomous University of Mexico. The program is for both graduate and undergraduate students.

A program of two quarters duration is designed primarily for graduates (with a Spanish major or minor) working toward a Teaching Credential. Students in this category may remain in Mexico for a third or fourth quarter if this would assist them in achieving their long-range academic objectives and providing proper approval has been given by the Study Center Director and the student's home campus. Graduate students with a comparable background in Spanish but without concerns for the Teaching Credential are also eligible for the program, but only after completing one full year of graduate study on a UC campus.

Undergraduate students with a general interest in the curriculum participate in the Mexico City program for a period of four concentrated academic quarters, starting in September and concluding in July. A special program involving study projects throughout Mexico may be available for undergraduates during the fourth quarter.

Both graduates and undergraduates in all categories are assisted, when qualified, in enrolling for additional course work in Mexican academic institutions associated with the

program. Undergraduates are selected for the Mexico City Study Center by the same criteria used for other Study Centers.

Courses are available in Mexican Art and Architecture, History of Mexico, Mexican Sociology, Spanish Language, Mexican Literature, and Education (teaching English as a second language, and curricula and instructional procedures and materials used in teaching Spanish).

THE PADUA STUDY CENTER

Two intensive compulsory courses in language and contemporary Italian history at the University of Padua from early September to mid-October precede the opening of the academic year. All instruction is in Italian and tutorials accompany courses in which several UC students are enrolled. Excellent opportunities are available for study in the following fields: Art History; Ancient, Medieval, Modern and Contemporary European History; Economics (international economic organization, the economics of developing countries); Italian Language and Literature; Philosophy; Political Science; and Religion (history and philosophy of religion, history of Christianity and the Church, early Christian literature).

Courses fulfilling general education requirements are available in the Humanities and Social Sciences.

THE PARIS STUDY CENTER

The University of California Study Center in Paris, a graduate program for the training of teachers of French, operates in close association with the Institut des Professeurs de Français à l'Étranger, an institute of the Faculty of Letters and Sciences of the University of Paris (Sorbonne). The program is designed for future teachers of French and will be conducted in two independent sessions of two quarters each. Students may enroll in either the autumn session from September 1 to January 30 or the spring session from February 1 to June 30. All participants must be French majors and must have been admitted to a Teaching Credential Program of the University of California prior to departure for Paris.

Courses are planned for the specific needs of credential students and include the following: graduate courses in Education and graduate seminars in French Linguistics and Literature; upper division courses in French Language and Linguistics, History of French Art, History of French Music, and French Political and Social Institutions.

The Pau-Paris Undergraduate Program

A new approach to French Civilization will permit a limited number of qualified undergraduates to experience an academic year in France sequentially in a provincial and metropolitan environment. The program involves intensive language courses in French at the University of Pau (September 1 to October 15), followed by continuation through the fall quarter (October 15 to January 31) at Pau, where courses are planned in regional aspects of French Civilization together with standard offerings in History, Geography, Art, Linguistics and Literature. For winter and spring quarters (February 1 to June 30) students are enrolled at the Institut des Professeurs de Français à l'Étranger of the University of Paris III in a combination of special courses in French Civilization and regular University of Paris courses.

THE SCANDINAVIAN STUDY CENTERS

The University of Bergen, Norway

An intensive course in Norwegian (mid-June to mid-August) precedes the beginning of the academic year at Bergen. For the first six weeks of the intensive language program, students live in Oslo, followed by four weeks in two locations in rural Norway. Intensive language study is continued into the fall semester at Bergen. University courses are taught in Norwegian, and although tutorials are not usual in the Norwegian system, they can be arranged for those with language difficulties. Norwegian students study one subject within a definite program; therefore, American students are advised to concentrate on one field of study—usually their major or a closely allied discipline.

Courses are offered in the following fields: Anthropology, Art History, Biology, Botany,

Chemistry, Economics and Business Administration, Geography, Geology, Geophysics, History, Mathematics, Norwegian, Oceanography, Philosophy, Physics, Psychology, Religious Studies, and Sociology.

The University of Lund, Sweden

Students who have had less than six quarters of Swedish will study the language in an intensive summer course. This study is continued into the fall semester for all students at the Center at appropriate levels until the student has gained the equivalent of two years of language study. Because of the demands of the fall intensive course on his time, the beginning student should not count on taking many courses in his academic discipline during the fall. While proficiency in Swedish is being increased, a small number of University courses may be available in English. Normally, students are enrolled in courses taught in Swedish during both the fall and spring semesters. Under the Swedish system, a student studies one major. Tutorials can be arranged when needed.

Courses are offered in the following fields: Anthropology, Architecture, Art History, Biochemistry, Biology, Botany, Chemistry, City and Regional Planning, Conservation and Pollution, Drama and Film History, Economics, Engineering, Folklore, Geography, Geology, History, Law, Linguistics, Mathematics, Music, Philosophy, Physics, Political Science, Psychology, Religious Studies, Scandinavian Studies, Sociology, and Zoology.

THE TOKYO STUDY CENTER

Since the International Christian University is organized primarily along the lines of an American institution, tutorials are not offered, but independent study with individual faculty members is available. Before enrolling, students must have completed one year of college Japanese or its equivalent. During their year of study students are expected to complete an additional 18 units of work in Japanese language. Excellent opportunities exist for students interested in the Japanese language and in problems of the Orient, but a limited knowledge of Japanese may restrict students to courses offered in English. The number of courses taught in English usually changes from year to year since such courses depend on foreign visiting faculty, or permanent I.C.U. faculty (Japanese and foreign) who can teach in English.

Students have profitably studied in the following fields: Japanese Archaeology, Japanese Art, Economics of the Far East, English Literature, History of the Far East, Japanese Language and Literature, Oriental Philosophy, Physics, Political Science, Religious Studies, Sociology of Japan.

THE STUDY CENTER IN THE UNITED KINGDOM AND IRELAND

The following institutions in England, Scotland and Ireland admit UC students in all major fields: University of Birmingham; University of Cambridge, Girton College; University of Dublin, Trinity College; University of Edinburgh; University of Kent; University of Leeds; University of Oxford, Wadham College; University of Reading; University of St. Andrews; University of Stirling; and University of Sussex.

The number of University of California students admitted to each university depends on the spaces available in any given department. Once accepted into a university department in his area of specialization, the student is expected to pursue his studies in that department only. In general, students may not take courses in other departments or colleges. Tutorials are an integral part of any course of study and constitute the greater part of a student's load at Cambridge, Oxford, and Sussex. The following enumeration of fields of study at individual universities gives an indication in which departments students were enrolled in the past. In coming years, depending on availability of spaces and on the applicants' needs, other fields may be added.

University of Birmingham: Anthropology, Biological Sciences, Chemistry, Economics, English, Geography, History, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology.

University of Cambridge, Girton College: English Literature.

University of Dublin, Trinity College: Art History, Economics, English, History, Mathematics, Philosophy, Psychology. Trinity encourages some students to follow a program in General Studies, that is, general courses in the humanities.

University of Edinburgh: Anthropology, Art (studio: Edinburgh College of Art; history: University of Edinburgh), Biological Sciences, Chemistry, Economics, English, History, Linguistics, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology. Students wishing to study in the Department of Music must take qualifying examinations before enrolling. Examinations are given after arrival in Edinburgh in mid-September.

University of Kent: Humanities, Natural Sciences, and Social Sciences.

University of Leeds: site of a new program, offers a wide variety of studies in the Humanities, Social Sciences, and Sciences. There are also departments of Agriculture, Engineering, and Management Studies.

University of Oxford, Wadham College: English, History, Philosophy, Psychology. Students are free to take courses outside their field of specialization.

University of Reading: Agriculture, Horticulture, Humanities, Natural Sciences, Social Sciences.

University of St. Andrews: Biological Sciences, English, History, Mathematics, Philosophy, Physics, Religious Studies. Courses in elementary language instruction for non-language majors are available.

University of Stirling: English, History, Philosophy, Psychology. Students are free to take courses outside their field of specialization.

University of Sussex: Art History, Biological Sciences, Chemistry, English, History, Mathematics, Philosophy, Physics, Political Science, Psychology, Sociology.

ENGINEERING

J. G. Skalnik, D. Eng., *Professor of Electrical Engineering, Dean, College of Engineering.*

Lower Division Courses

Engr. 1. Concepts of Technology. (3-3-3)

I, II, III. The Staff

Prerequisite: None.

A nonmathematical survey of those aspects of technology which are particularly relevant to an understanding of the modern manmade society. The course is specifically designed for non-engineering majors.

Engr. 3A-B. Computer Solutions of Engineering and Science Problems.

(2-2) I (A), II (B). The Staff

Prerequisites: Math 3A-B, concurrently.

Applications of computers to engineering and scientific problems. FORTRAN language programming, elements of numerical analysis, including introduction to error sources, recursion, numerical calculus, root finding, etc. Students will use the computer.

Available to students in engineering, science, and mathematics.

CHEMICAL AND NUCLEAR ENGINEERING

Henri J. Fenech, Sc.D., *Professor of Nuclear Engineering.*

John E. Myers, Ph.D., *Professor of Chemical Engineering.*

Duncan A. Mellichamp, Ph.D., *Associate Professor of Chemical Engineering.*

A. Edward Profio, Ph.D., *Associate Professor of Nuclear Engineering.*

Robert G. Rinker, Ph.D., *Associate Professor of Chemical Engineering. (Chairman of the Department).*

G. Robert Odette, Ph.D., *Assistant Professor of Nuclear Engineering.*

Orville C. Sandall, Ph.D., *Assistant Professor of Chemical Engineering.*

UNDERGRADUATE PROGRAMS:

Chemical Engineering

In preparing a program in chemical engineering a student should plan to meet the requirements in General Education common to all the engineering curricula (described under the heading "College of Engineering"), and should take the following courses:

Lower Division—(67 units): Engr. 3A-B, ChE 10, Chemistry 1A-B-C, Chemistry 1L

A-B-C, EE 6A-B, Mathematics 3A-B-C, Mathematics 5A-B-C, ME 10, Physics 7A-B-C.

Upper Division—(62 units): ChE 110A-B, ChE 120A-B-C, ChE 128, ChE 130A, ChE 140A-B, ChE 150A-B, ChE 180A-B, ChE 182, Chemistry 113B-C, Chemistry 130A-B-C, NucE 115.

The requirements for admission as a freshman in the College of Engineering are listed earlier in this catalogue. Transfer students who have completed most of the lower division courses listed above and are entering the junior year of the chemical engineering program may take Ch.E. 10 in the fall quarter concurrently with Ch.E. 120A. No entrance examination is required.

Chemical engineering students with a strong interest in chemistry are advised to consider a five year program leading to B.S. degrees in both chemical engineering and chemistry. Such programs are available by mutual agreement between the Department of Chemistry and the Department of Chemical and Nuclear Engineering.

Nuclear Engineering

The undergraduate curriculum in nuclear engineering provides an education in all the basic areas of nuclear engineering with emphasis on developments in the nuclear power industry. In addition to meeting the requirements in General Education common to all the engineering curricula, the student should take the following courses:

Lower Division—(66 units): Engr. 3A-B, NucE 10, Chemistry 1A-B-C, Chemistry 1L A-B-C, EE 6A-B, Mathematics 3A-B-C, Mathematics 5A-B-C, ME 10, Physics 7A-B-C.

Upper Division—(63 units): NucE 111, NucE 112, NucE 115, NucE 120A-B, NucE 125, NucE 130A-B, NucE 140A-B, ChE 120A-B, Mathematics 124A-B-C, Physics 116A-B, Physics 117.

The requirements for admission to the program as a freshman are those of the College of Engineering. Transfer students who have completed the majority of the lower division courses listed above will be accepted in the program as juniors. There is no entrance examination.

GRADUATE PROGRAMS:

Graduate programs are offered in chemical engineering leading to the degrees of Master of Science and Doctor of Philosophy. Although graduate degrees are not yet offered in nuclear engineering, Plan I for the M.S. degree in chemical engineering is a broad program which permits students to take a substantial portion of their course work in the nuclear field and to do their theses under the direction of the nuclear engineering faculty.

THE DEGREE OF MASTER OF SCIENCE

Requirements

1. Acceptance for admission to the Master of Science program is subject to the admission requirements of the Graduate Division. It is expected that most applicants will have obtained undergraduate degrees in chemical engineering. However, students with degrees in other branches of engineering or in science will be accepted with the provision that they take such undergraduate courses as prescribed by the department as prerequisites for an acceptable graduate course program in chemical engineering.

2. Knowledge of a foreign language will not be required for the M.S. degree in chemical engineering.

3. It is expected that most students will follow Plan I, although students with special backgrounds or requirements will be permitted, at the option of the Department, to follow Plan II. The details of these plans are as follows:

Plan I—Thirty units of course credit will be required of which approximately fifty per cent must be chosen from 200-level courses in chemical engineering. The remaining credits may be chosen from 100- or 200-level courses in chemical engineering or other branches of engineering or science, as approved by the Department. No graduate credit will be allowed for any course required for the B.S. degree in chemical engineering at Santa Barbara. In addition to meeting the course credit requirement, each student will be expected to pursue a research

project, which may be either theoretical or experimental, and to describe the results of this research in a thesis. The final requirement will be that the student must present and defend the thesis in an oral examination.

Plan II—Thirty-six units of course credit will be required, of which approximately two-thirds must be chosen from 200-level courses in chemical engineering. The remainder may be chosen on the same basis as outlined under Plan I. Because of the importance of the individual research project in graduate education it is anticipated that the only persons allowed to follow Plan II will be those who have had adequate research experience prior to beginning graduate work or who plan to continue for doctoral work at Santa Barbara. The conclusion of a satisfactory M.S. program under Plan II will be marked by an oral examination of the candidate in those subjects studied in the graduate course program.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. Admission requirements are the same as for the degree of Master of Science.
2. There are no specific graduate course requirements. However, the student will be expected to plan and secure approval of a program of courses in chemical engineering and in related fields which will provide him with depth of understanding in the principal areas of chemical engineering.
3. A written preliminary examination will be administered by the Departmental Graduate Committee during the first year. Students unable to demonstrate clearly their capability for doctoral work at this point will be advised to pursue the M.S. degree with thesis (Plan I). At the conclusion of the M.S. program, the student's cumulative performance in courses, research and preliminary examination will be reviewed by the Department and a final decision made whether or not to allow him to continue a program for the Ph.D. A student who has earned an M.S. degree at another university will be required to take the preliminary examination as a basis for evaluation at UCSB.
4. Knowledge of a foreign language will not be required of doctoral students.
5. At the end of the second year of graduate study if the student has continued to make satisfactory progress in his courses a doctoral committee will be recommended to supervise all further progress and examinations. This committee will then administer an oral examination on subject matter related to the research and on any additional material it considers desirable and will make a recommendation on advancement to candidacy.
6. Each student will be expected to pursue a research project which may be either theoretical or experimental and to describe the results of this research in a dissertation. The final requirement is that the student must present and defend his dissertation in an oral examination conducted by his doctoral committee. The period of time between advancement to candidacy and completion of the final oral examination is expected to be approximately one and one-half years.

CHEMICAL ENGINEERING

Lower Division Course

10. Introduction to Chemical Engineering.

(4) I.

Mr. Sandall

Prerequisites: Chemistry 1A-B-C; Math 3A-B-C. Elementary principles of chemical engineering. The major topics discussed include material and energy balances, stoichiometry, and thermodynamics.

Upper Division Courses

110A-B. Chemical Engineering Thermodynamics. (3-3) II, III.

The Staff

Prerequisites: Math 5A.

The first and second laws of thermodynamics are used to predict changes of state in frictional proc-

esses. Volumetric and phase behavior of real gases and liquids in multicomponent systems are studied. Consideration is given to chemical equilibrium in reacting systems.

120A-B-C. Transport Processes. (4-3-3)

I, II, III.

Mr. Myers, Mr. Sandall

Prerequisites: Math 5A-B-C; Physics 7C.

Principles and applications of fluid mechanics, heat transfer and mass transfer in determining rates of transport processes.

128. Equilibrium Stage Processes. (3) II.

Mr. Sandall

Prerequisites: Ch.E. 10, Ch.E. 110A.

Basic principles and design techniques of equilibrium-stage separation processes. Emphasis is

placed on binary distillation, liquid-liquid extraction, and multicomponent distillation.

130A-B-C-D. Theoretical Methods in Chemical Engineering. (3-3-3) I, II, III.
Mr. Hanna

Prerequisite: Math 5A-B-C.

Coordination and extension of previous work in chemical engineering using advanced theoretical methods.

140A-B. Chemical Kinetics of Industrial Processes. (3-3) I, II. Mr. Rinker

Prerequisites: Ch.E. 110A-B; Ch.E. 120A-B-C.

Kinetics of homogeneous and heterogeneous reacting systems, with and without catalysis and its use in predicting chemical conversion in flow and nonflow reactors. Emphasis is placed on the behavior and design considerations of packed-bed reactors.

150A-B. Chemical Process Dynamics and Control. (3-3) II, III. Mr. Mellichamp

Prerequisites: Ch.E. 120A-B-C, EE 6A.

Fundamentals of chemical process dynamics and automatic control including servomechanism theory, transfer functions, block diagrams, frequency response, digital and analog computer simulation.

158. Introduction to Real-Time Digital Computing. (3) I. Mr. Mellichamp

Prerequisite: Consent of the instructor.

Basic principles of real-time digital information processing with emphasis on the use of computer for data acquisition or feedback control of chemical processes.

160. Polymer Systems. (3-3-3) I, II, III.

Mr. Rinker

Prerequisite: Consent of the instructor.

Treats polymerization from a chemical engineering point of view. Some topics which are considered include polymerization kinetics, polymer rheology, solid-state properties and reactor design for polymerization.

180A-B. Chemical Engineering Laboratory. (3-3-3) I, II, III. The Staff

Prerequisites: Ch.E. 110A-B; Ch.E. 120A-B-C;

Experiments in thermodynamics, fluid mechanics, heat transfer, mass transfer, reactor kinetics and chemical processing. Experimental design, analysis of results, and preparation of reports.

182. Design and Cost Principles of Chemical Processes. (4) III. The Staff

Prerequisites: Ch.E. 110A-B; Ch.E. 120A-B-C; Ch.E. 140A-B.

The use of chemical engineering and cost principles in solving comprehensive problems in the design of a chemical process.

198. Independent Studies in Chemical Engineering. (1-5) I, II, III, SS.

The Staff

Prerequisite: Consent of instructor.

Individual study, either experimental or theoretical, open to qualified seniors in chemical engineering.

Graduate Courses

210A-B. Advanced Thermodynamics.

(3-3) I, III.

The Staff

Prerequisite: Consent of instructor.

Advanced topics in thermodynamics including properties of real gases, solutions, phase and chemical equilibria, statistical mechanics, irreversible processes.

220A-B-C. Advanced Transport Processes.

(3-3-3) I, II, III. Mr. Sandall, Mr. Myers

Prerequisite: Consent of instructor.

A study of the basic laws of momentum, energy and mass transport with emphasis on the prediction of transport rates in chemical engineering applications.

230A-B-C. Advanced Theoretical Methods in Chemical and Nuclear Engineering.

(3-3-3) I, II, III.

Mr. Hanna

Prerequisite: Consent of instructor.

Mathematical formulation and solution of problems drawn from the fields of fluid mechanics, heat and mass transfer, thermodynamics, kinetics and reactor design.

240A-B. Advanced Chemical Reactor

Design. (3-3) II, III.

Mr. Rinker

Prerequisite: Consent of instructor.

Following a review of the theory of reaction kinetics for catalyzed and non-catalyzed systems, detailed consideration is given to the design and performance of chemical reactors. Mathematical studies of stability and optimization are emphasized in relationship to mass, energy and momentum transport.

250. Advanced Process Dynamics and

Control. (3) I.

Mr. Mellichamp

Prerequisite: Consent of instructor.

Theoretical and experimental determination of chemical process dynamics, state variable design techniques applied to multivariable systems, analysis of sampled data systems with computer control applications, non-linear system design.

252. Optimum Control Theory. (3) III.

Mr. Mellichamp

Prerequisite: Consent of instructor.

The application of recent theoretical developments to the design of optimum control systems. Introduction to stochastic processes, on-line characterization of time-varying processes, design of adaptive systems, optimum control.

260. Nuclear Power Systems Design. (4) III.

Mr. Fenech

Prerequisite: Consent of instructor.

A team work design and optimization of a nuclear power system using the latest methods of analysis and currently available computer programs.

290. Seminar. (.5) I, II, III.

The Staff

Research presentations by graduate students. May be repeated for credit.

594. Special Topics. (1-4) I, II, III, SS.

The Staff

Special seminar on research subjects of current interest.

596. Directed Reading and Research.

(2-4) I, II, III, SS. The Staff

A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division.

598. Master's Thesis Research and Preparation. (0-12) I, II, III, SS.

The Staff

Only for research underlying the thesis and writing the thesis. Not applicable to course requirement for M.S. degree.

599. Ph.D. Dissertation Research and Preparation. (0-12) I, II, III, SS.

The Staff

Only for research underlying the dissertation and writing the dissertation.

NUCLEAR ENGINEERING**Lower Division Course****10. Introduction to Nuclear Energy.** (3) III.

Mr. Profio

Prerequisite: Consent of Instructor.

A survey course introducing various aspects of nuclear energy and radiation. Energy demand and resources. Principles of fission and fusion reactors. Basis of radiation protection standards. Environmental effects of nuclear plants, reactor safety and radioactive waste disposal.

Upper Division Courses**111. Isotopes and Applied Radiation.** (3) I.

Mr. Odette

Radioactive and machine sources of radiation. Interactions of radiation with matter. Chemical and biological effects. Detection and dosimetry. Applications of radioisotopes and radiation in medicine, research and industry.

112. Principles of Nuclear Energy

Conversion. (3) II. Mr. Odette

Prerequisites: Chem 1C, Math 3C.

Thermodynamic principles and laws with emphasis on applications to the problems of nuclear engineering. Relations of macroscopic and microscopic approaches discussed along with some results from statistical mechanics.

115. Modern Materials Science. (3) III.

Mr. Odette

Prerequisite: Physics 7C.

Principles underlying the mechanical, physical, and chemical behavior of ceramics, polymers and metals. Crystal and defect structure, equilibrium and non-equilibrium phase relations, kinetics, flow fracture oxidation and corrosion.

116. Nuclear Materials and Radiation Effects. (3) III. Mr. Odette

Prerequisite: Nuc.E. 115, Phys. 116A-B.

Application of fundamentals principles of nuclear physics and materials science to nuclear technology.

Materials for nuclear applications and radiation effects.

121. Nuclear Measurements Laboratory.

(3) II. Mr. Profio

Prerequisite: Nuc.E. 111.

Nuclear electronics and measurements of nuclear radiations. Topics include: radiation protection and dosimetry, radioactive decay, counting statistics, range of charged particles, gamma ray and neutron attenuation and scattering, pulse and dc nuclear electronics and detectors.

122. Nuclear Safety and Environmental

Impact. (3) II. Mr. Profio

Prerequisites: Nuc.E. 111, Nuc.E. 140A.

Radiation protection and shielding. Dose from radioactive effluents. Waste disposal systems. Criticality and reactor safety analysis. Siting of nuclear facilities. Licensing and environmental impact evaluation.

125. Neutronics Laboratory. (4) III.

Mr. Profio

Prerequisite: Nuc.E. 120A-B or consent of instructor.

Measurements of neutronic behavior in subcritical and critical reactors, investigating neutron diffusion, kinetics, reactor operation.

130A-B. Nuclear Systems Engineering.

(4-4) II, III. Mr. Fenech

Prerequisites: Nuc.E. 140A, Math. 124A-B-C or equivalent, EE 6A-B.

Nuclear power cycles. Heat removal and fluid flow in nuclear systems. Power and temperature distribution in core. Thermal stresses and fatigue in components. Nuclear fuel elements design and performance. Flow induced vibrations. Various reactor concepts.

140A-B. Nuclear Systems Theory. (4-4) I, II.

Mr. Fenech

Prerequisite: Math. 124A-B-C.

The fundamental physical principles underlying the operation of nuclear systems in the framework of the diffusion theory of neutrons.

160. Principles of Controlled Thermonuclear Reactors. (3) I. Mr. Odette

Prerequisite: Senior standing in engineering or physical sciences or consent of instructor.

Fundamentals of controlled thermonuclear fusion reactor technology. Fusion reactions. Elementary plasma theory. Heating and confinement of thermonuclear plasmas. Vacuum and magnet technology. Conceptual designs of reactors, energy conversion methods, blanket neutronics and tritium breeding. Materials problems.

198. Independent Studies in Nuclear Engineering. (1-5) I, II, III, SS.

The Staff

Prerequisite: Consent of instructor.

Individual study under a faculty supervisor. This course gives an opportunity to qualified senior students to pursue or initiate some independent experimental or theoretical research.

Graduate Courses**216. Nuclear Materials Engineering. (4) II.**
Mr. Odette

Prerequisite: Nuc.E. 115.

A systems approach to the influence of the nuclear environment on the behavior of reactor materials and their interactions. Application to fission and fusion technology.

220. Numerical Methods of Nuclear Systems Analysis. (3) II.
Mr. Profio

Prerequisites: Engr. 3A-B, Nuc.E. 140.

Numerical methods of solution of nuclear engineering problems. Applications using the available nuclear computer codes developed in industry.

230. Nuclear Power Economics. (3) I.

Mr. Fenech

Prerequisites: Nuc.E. 130, Nuc.E. 140 or equivalent.

Actual and future needs for nuclear power. The various components of nuclear power. Nuclear fuel cycle costs. Nuclear materials utilization.

594. Special Topics.

(1-4) I, II, III, SS.

The Staff

Special seminar on research subjects of current interest.

596. Directed Reading and**Research. (2-4) I, II, III, SS.** The Staff

A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division.

598. Master's Thesis Research and**Preparation. (0-12) I, II, III, SS.**

The Staff

Only for research underlying the thesis and writing the thesis. Not applicable to course requirement for M.S. degree.

599. Ph.D. Dissertation Research and**Preparation. (0-12) I, II, III, SS.**

The Staff

Only for research underlying the dissertation and writing the dissertation.

 ELECTRICAL ENGINEERING AND COMPUTER SCIENCEJohn A. Baldwin, Ph.D., *Professor of Electrical Engineering.*Albert G. Conrad, E.E., *Professor of Electrical Engineering, Emeritus.*Glen J. Culler, Ph.D., *Professor of Electrical Engineering.*Steven M. Horvath, Ph.D., *Professor of Electrical Engineering.*Kenneth L. Kotzebue, Ph.D., *Professor of Electrical Engineering.*George L. Matthaei, Ph.D., *Professor of Electrical Engineering.*Philip F. Ordung, D.Eng., *Professor of Electrical Engineering.*John G. Skalnik, D.Eng., *Professor of Electrical Engineering (Dean of the College of Engineering).*Edwin B. Stear, Ph.D., *Professor of Electrical Engineering.*Glen Wade, Ph.D., *Professor of Electrical Engineering.*Jorge R. Fontana, Ph.D., *Associate Professor of Electrical Engineering.*Augustine H. Gray, Jr., Ph.D., *Associate Professor of Electrical Engineering.**Glenn R. Heidbreder, D.Eng., *Associate Professor of Electrical Engineering.*James A. Howard, Ph.D., *Associate Professor of Electrical Engineering.*Roger C. Wood, Ph.D., *Associate Professor of Electrical Engineering (Chairman of Department of Electrical Engineering and Computer Science).*Phillip E. Allen, Ph.D., *Assistant Professor of Electrical Engineering.*David L. Heald, Ph.D., *Assistant Professor of Electrical Engineering.*Leon Presser, Ph.D., *Assistant Professor of Electrical Engineering.*Joseph J. Sayovitz, Ph.D., *Lecturer in Electrical Engineering.*Richard C. Neville, Ph.D., *Research Associate in Electrical Engineering.***UNDERGRADUATE PROGRAMS**

Schedules should be planned to meet the requirements in General Education and in the major. Detailed descriptions of these requirements are listed in this catalog under the heading, "College of Engineering" and in the separate bulletin, "College of Engineering Announcement."

The following lower-division courses are required: Engr. 3A-B; EE 2A-B-C; Chemistry 1A-B-C, 1AL-BL-CL; Math 3A-B-C, Math 5A-B-C; ME 10; and Physics 7A-B-C, 7AL-BL-CL.

* On Leave 1973-74.

The following upper-division courses are required: EE 130A-B, EE 134, EE 136A-B, EE 139A-B, and ME 105.

Students must select a minimum of 24 units from a group of elective EE courses. With the exception of EE 105 and EE 130C, the EE elective units are normally earned in the senior year. Examples of acceptable senior programs are given in the following listings. More than the needed 24 EE units are listed in each of the three example programs to indicate that a degree of flexibility is available within each program. Although not specifically listed in the sample programs, EE 158A-B-C, EE 170A-B-C and EE 199 may be selected. Also, representative non-EE elective courses are listed.

(a) Program in Computer Engineering and Computer Science

Fall:	EE 165A	EE 151	EE 140
Winter:	EE 165B	EE 152A	EE 154
Spring:	EE 165C	EE 152B	EE 150 or EE 173

Non-EE electives: Math 104A-B-C, 104AL-BL-CL; Math 108A-B; Math 110; Math 136; Math 137; Math 138.

(b) Program in Solid-state, Quantum Electronics, Microwaves and Communications

Fall:	EE 160A	EE 140
Winter:	EE 160B	EE 144A EE 146A-AL
Spring:	EE 160C	EE 144B EE 146B-BL

Non-EE electives: Math 108A-B, Math 122A-B, Physics 115A-B, Physics 123, and Physics 141.

(c) Program in Systems Science

Fall:	EE 140	EE 145A
Winter:	EE 147A	EE 146A-AL EE 145B
Spring:	EE 147B	EE 146B-BL EE 150

Non-EE electives: Math 104A-B-C, Math 108A-B, Math 122A-B.

THE DEGREE OF MASTER OF SCIENCE

Requirements

1. In addition the general requirements for admission to graduate status, the Department requires a bachelor's degree or its equivalent from a school or college of recognized standing.

2. Applicants with undergraduate preparation that is deemed inadequate may be required to take remedial courses.

3. The degree is administered under Plan II, which requires 36 units of course work approved by the Departmental Graduate Adviser, and the passing of a comprehensive final examination. A minimum of 18 of the required 36 units must be in graduate courses (200 series), at least 12 of which must be in the Department of Electrical Engineering and Computer Science. The remaining 18 required units, or any portion thereof, may be approved upper-division courses in engineering, mathematics, chemistry, physics, or other approved areas. No more than 50% or 18 units of upper-division courses (whichever is less restrictive) are permitted. Fields of study include biomedical engineering, circuits, communications, computers, magnetics and memories, microwaves, quantum electronics, solid-state electronics, and systems science.

4. Programs in the various fields of study are tailored to meet individual needs. For example, a typical program in the computer area might include selections from the undergraduate courses, EE 105, EE 150, EE 151, EE 152A-B, EE 158A-B-C, EE 165A-B-C, and EE 173, as well as selections from the graduate courses, EE 252A-B-C, EE 273A-B-C, and EE 275A-B-C. Special topics in computers are also available under EE 210; individual projects can be done under EE 207A-B-C.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. In addition to the general requirements for admission to graduate status, the Department requires a Master of Science or equivalent, and evidence of ability to profit from both instructional and research activities of the Ph.D. program.
2. Subject to having satisfied the prescribed residence requirements, the student may take the oral qualifying examination at such time as the faculty of the Department deems the student to be prepared.
3. There are no specific course requirements for the Ph.D. program; however, the student will be expected to elect such courses as he needs to prepare for the qualifying examination and for his research.
4. Prior to the oral qualifying examination, the Department will administer such examinations as it deems necessary for the determination of the adequacy of the depth and breadth of the student's knowledge.
5. A dissertation will be submitted and defended in an oral examination.

1. Understanding Man's Electrical Environment. (3) III.

The Staff

Prerequisites: None.

Course is nonmathematical. Designed to give practical insight into common electrical systems, such as radio, television, audio, tape recording, light sources, telephones, computers, machines, antipollution devices. In laboratory, student will construct and debug *any* piece of electrical or electronic equipment of his own choosing.

2A-B-C. Circuits Devices and Systems.

(4-4-4) I, II, III.

Mr. Baldwin

Prerequisites: Math. 3A-B-C, ME 10, or consent of instructor.

1. Circuits: natural response, forced response, complete response, sinusoidal steady state, theorems. 2. Electronic Devices: principles, linear models, amplifiers, digital electronics, dc machines, transformers. 3. Systems: feedback, analog computers, instrumentation, automatic control. 4. On-line computing.

4. Engineering, the University, and Society.

(1) I.

Mr. Wade

Prerequisite: None.

How engineering relates to the university and to society. Series of ten lectures, many to be given by guest speakers, will cover (1) relationship between a liberal university education and the objective of a university engineering department, and (2) the place of engineering in society. Not to be offered 1973-74.

5. Introductory Digital Computing Lab.

(3) I, III, IV.

Mr. Heald

Prerequisites: None.

A brief introduction to basic components, organization and operation of digital computers. Provides usable knowledge of FORTRAN coding and program preparation for an IBM 360/75 digital computer with emphasis on the applications of digital processing.

6A-B. Circuits and Electronics. (4-4) I, II.

The Staff

Prerequisites: Math 3A-B-C, ME 10 or consent of instructor.

Introduction to basic electrical circuits and electronics. Includes Kirchhoff's laws, network responses, power distribution, diodes, transistor circuits, analog

computation, instrumentation, and system concepts. For the non-EE major.

Upper Division Courses

105. An Introduction to Digital Computing.

(3-3) I, III.

The Staff

Prerequisites: EE 5 or Engr. 3A-B or equivalent.

Digital computer organization and an introduction to hardware and software concepts. Elements of machine language programming. Boolean algebra and logic networks. Computer subsystem configurations. Operation of digital computing systems.

107A-B-C. Directed Research.

(1-4) I, II, III, IV.

The Staff

Prerequisite: Consent of instructor.

Directed research projects open to qualified undergraduates in electrical engineering or related fields. Research projects are to be arranged by student and staff member. The course is designed to give unusual undergraduates early experience in research. Not acceptable for departmental senior electives.

130A-B-C. Engineering Analysis.

(4-4-3) I, II, III.

Mr. Gray

Prerequisites: Math 5A-B-C, EE 2A-B-C or consent of instructor.

Study of mathematical principles applied to engineering. In particular, complex variables, Fourier analysis and linear systems, engineering probability.

134. Introductory Field Theory. (3) I.

Mr. Matthaei

Prerequisites: Physics 7B or equivalent, Math 5C.

Electric- and magnetic-field concepts and laws. Fundamentals of vector analysis. Dipoles, properties of materials, energy, Maxwell's equations. Laplace, Poisson, and wave equations, and methods for their solution. Plane waves.

136A-B. Electronics. (4-4) II, III.

Mr. Kotzebue

Prerequisite: Mathematics 5C, EE 2C or consent of instructor.

Electronics for electrical engineering students. The emphasis is on the study of basic circuits employing semiconductor devices, with particular attention given to the analysis and design of small-signal, broadband amplifiers.

138A. Introductory Circuits. (3) I. Mr. Allen

Prerequisite: Transfer junior standing in electrical engineering.

Circuit theory for transfer students at the junior level who have not had the equivalent of EE 2A-B-C. Usually taken concurrently with EE 138B.

138B. Introductory Electronics. (3) I. Mr. Skalnik

Prerequisite: Transfer junior standing in electrical engineering.

Electronics for transfer students at the junior level who have not had the equivalent of EE 2A-B-C. Usually taken concurrently with EE 138A.

139A-B. Network Theory. (4-4) II, III. Mr. Fontana

Prerequisites: EE 2C or EE 138A, EE 130A, and concurrent registration in EE 130B.

Analysis and design of linear electric networks using time and frequency-domain methods and computer techniques.

140. Analysis of Signals and Linear Systems. (4) I. Mr. Heidbreder

Prerequisites: EE 130A-B, EE 139A-B or consent of instructor.

Analytical representation of signals in electrical communications and control. Orthogonal function expansions, continuous and discrete Fourier transforms, Laplace and z-transforms. Sampling theory, autocorrelation, energy and power spectra. Analysis of continuous and discrete linear systems. Fundamental concepts of feedback systems.

143A-B. Alternating-Current Machinery. (4-3) I, II. Mr. Conrad

Prerequisite: EE 139A-B, or consent of instructor.

Principles of alternating-current machinery. Transformers, induction machinery, synchronous machines, power conversions, adjustable-speed drives.

Not offered during 1973-74.

144A-B. Electromagnetic Fields and Waves. (3-3) II, III. Mr. Matthaeci

Prerequisite: EE 134 or equivalent.

Waves on transmission lines, Maxwell's equations, mathematical techniques for dynamic fields, skin effect, propagation and reflection of electromagnetic waves in materials with different electrical properties, waveguides, resonant cavities, and antennas. Microwave and optical-device examples. Selected experiments.

145A. Large-signal Electronics. (4) I. Mr. Kotzebue

Prerequisite: EE 136A-B, or consent of instructor.

A study of semiconductor electronic circuits with emphasis on the analysis and design of large-signal amplifiers, oscillators, and wave-shaping circuits.

145B. Communications Electronics. (3) II. Mr. Kotzebue

Prerequisite: EE 145A, or consent of instructor.

The analysis and design of solid-state communication circuits. Topics covered will include RF and IF amplifiers, AGC circuits, mixers and demodulators.

146A. Analog Communication Theory and Techniques. (3) II. Mr. Heidbreder

Prerequisite: EE 140, or consent of instructor; EE 130C recommended.

The representation of noisy signals in communication systems. Elementary random processes. Modulation theory. AM, FM, PM and analog pulse modulation and demodulation techniques. Noise models in electronic circuits. System noise and performance calculations.

146AL. Analog Communication Laboratory. (1) II. Mr. Heidbreder

Prerequisite: EE 146A must be taken concurrently. Normally required of all students enrolled in EE 146A, but is optional for students also enrolled in EE 145B or who demonstrate a suitable background of laboratory experience.

Measurements of random noise. Experiments in techniques of modulation and demodulation.

146B. Digital Communication Theory and Techniques. (3) III. Mr. Heidbreder

Prerequisites: EE 140, EE 146A or consent of instructor, EE 130C recommended.

The quantitative measure of information. Introduction to the fundamental theorems of information theory and their implications in system design. Quantization and coding. Pulse code modulation (PCM). Matched filters, PCM modems, elementary decision-theory concepts. Concepts of error detection and correction. Coded PCM systems. Feedback communication systems.

146BL. Digital Communication Laboratory. (1) III. Mr. Heidbreder

Prerequisite: EE 146B must be taken concurrently. Normally required of all students enrolled in EE 146B but is optional for students also taking EE 152B or who demonstrate a suitable background of laboratory experience.

Experiments in matched filtering, A-D conversion, D-A conversion, and generation and detection of waveforms for digital communication.

147A. Introductory Systems Science I—Feedback Systems. (4) II. Mr. Stear

Prerequisite: EE 140.

Criteria for feedback systems design—frequency domain and time-domain specifications. Design techniques for multiloop feedback systems. Direct synthesis methods. Computer-aided design methods; automated design methods. Describing function analysis of nonlinear feedback systems. Design of nonlinear feedback systems.

147B. Introductory Systems Science II—State-Space Methods. (4) III. Mr. Stear

Prerequisite: EE 147A.

Vector spaces, state-space equations for dynamic systems, solutions. Fundamental matrices, transition matrices. Final-value control. Controllability. Observability. Canonical forms for state-space equations. Linear-quadratic control problems. Stability analysis using Liapunov functions and phase plane.

150. Analog Computation. (3) III. Mr. Wood

Prerequisites: Math 5C or equivalent, EE 2A-B-C or consent of instructor.

Application of analog computers to engineering and

scientific problems. Study of simulation methods including analog/hybrid and digital techniques.

151. Computer Memories. (3) I. Mr. Baldwin

Prerequisite: EE 2A-B-C or EE 138A-B or consent of instructor.

State-of-the-art random-access memory devices. Review of electricity and magnetism relevant to memory device operation. Core switching properties; switching speed, core testing. Core memories: linear select, coincident current 2½D. Memory accessing. Read-only memory. High-speed memory: thin films, plated wire.

152A. Switching Theory. (4) II. Mr. Howard

Prerequisite: EE 105 or consent of instructor.

Boolean algebra, switching functions. Application of Boolean algebra to the design and analysis of combinational logic nets; minimization procedures. Analysis and synthesis of sequential switching circuits; synchronous and asynchronous operation; state minimization; hazards and races.

152B. Digital System Design. (4) III.

Mr. Howard

Prerequisite: EE 152A or consent of instructor.

Formal description of digital systems. Design of functional subsystems; arithmetic processors, storage systems, sequence generators. Organization and design of general-purpose digital computers and of special-purpose digital systems.

154. Introduction to Computer Architecture. (3) II. The Staff

Prerequisite: EE 105.

Introduction to the architecture of computer systems. Topics include channels, controllers, memory hierarchy, interrupt systems, software versus hardware tradeoffs, I/O devices, overview of components of operating systems, discussion of architecture of existing systems.

155. Solid-State Power Devices. (3) III.

Mr. Skalnik

Prerequisites: EE 136A-B, EE 143A, EE 160A or consent of instructor.

High-level operation of solid-state devices. Application to rectification, inversion and control.

158A-B. Digital Signal Processing. (4-4) I, II.

Mr. Culler

Prerequisites: None, Upper Division standing in engr, math or phys. sciences.

Topics covered will include discrete networks, difference equations, digital filter design, design of convolution operators, orthogonal functions, fast Fourier transform, generalized frequency measures, generalized spectral analysis.

158C. Computer Solution of Partial Differential Equations. (4) III.

Mr. Culler

Prerequisite: Math 104 or EE 105 or consent of instructor.

The numerical analysis of surfaces. Use of the digital computer to solve partial differential equations arising in engineering and the physical sciences.

160A. Introductory Quantum Mechanics. (3) I.

Mr. Wade, Mr. Fontana

Prerequisites: EE 134, ME 105, EE 130A-B or equivalent.

Electron wavefunctions, electron diffraction and potential wells. Operators, eigen functions and observables. Harmonic oscillators, hydrogen-atom wavefunctions and properties, electrons in crystals.

160B-C. Solid-State Device Electronics. (3-3) II, III.

Mr. Skalnik

Prerequisite: Senior standing or consent of instructor.

Theory, design and fabrication of solid-state devices. Includes thin-film components, semiconductor diodes, transistors, MOSFETS and integrated circuits.

165A. Information Structures. (3) I.

Mr. Presser

Prerequisite: EE 105 or consent of instructor.

Study of fundamental structures employed to represent information in main computer storage. Advantages and disadvantages of using alternative information structures in the solution of problems. Methods of storage management. Information structures in programming languages.

165B. Formal and Programming Languages. (3) II.

Mr. Presser

Prerequisite: 165A or consent of instructor.

Basic concepts in the theory of formal languages and automata. Analysis and evaluation of programming languages from a data and control structure point of view. Interactive languages. Consideration of various programming languages.

165C. Translation of Programming Languages. (3) III.

Mr. Presser

Prerequisite: EE 165B or consent of instructor.

Structure of translators. Assemblers, interpreters and compilers. Basic translation techniques. Translators for batch and on-line environments. Translation of precedence and LR(k) languages. Rudiments of translator writing systems.

170A. Introduction to Biomedical Engineering. (3) I.

Mr. Horvath

Prerequisite: Senior standing in engineering.

Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc.

170B-C. Biomedical Engineering. (3-3) II, III.

Mr. Horvath

Prerequisites: EE 170A and consent of instructor.

Detailed investigation of specific biomedical engineering problems, tours of local medical facilities; demonstrations of physiological and medical instrumentation systems. Topics to be determined based on progress in the various fields of biomedical engineering.

173. Architecture of Operating Systems. (3) III.

Mr. Presser

Prerequisite: EE 165A or consent of instructor.

Study of the structure, design and evaluation of operating systems. Integrated consideration of architectural software/hardware tradeoffs.

194. Group Studies for Advanced Students. (1-4) I, II, III.

The Staff

Prerequisite: Consent of instructor.

Group studies intended for small number of advanced students who share an interest in a topic not included in the regular Departmental curriculum.

199. Independent Studies in Electrical Engineering. (1-5) I, II, III, IV.

The Staff

Directed individual study, normally experimental, open to qualified seniors in the Department of Electrical Engineering. 199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

201A-B. Electromagnetic Theory. (3-3) I, II. Mr. Matthaei

Prerequisite: EE 144A-B or equivalent.

Fundamental theorems and techniques for treatment of electromagnetic boundary value and radiation problems. Perturbational, variational, and computer-numerical methods, with microwave engineering examples.

201C. Antennas. (3) III. Mr. Matthaei

Prerequisite: EE 144A-B or equivalent.

Classical and computer-numerical methods for analysis and design of antennas. Single-element antennas, antenna arrays and analysis of mutual-impedance effects, aperture antennas, and frequency independent antennas. Offered in alternate years with EE 201D.

201D. Microwave Circuits. (3) III.

Mr. Matthaei

Prerequisite: EE 144A-B. EE 144B may be taken concurrently.

Field and circuit theory applied to waveguide and transmission-line networks. Analysis of discontinuities and couplings, resonators, filters, and directional couplers. Fundamental limitations for wideband impedance matching, design techniques for optimum wideband coupling structures for solid-state (and other) devices. Offered in alternate years with EE 201C.

202A-B. Microwave Solid-State Devices.

(3-3) I, II.

Mr. Kotzebue

Prerequisite: EE 144A-B or consent of instructor.

An introduction to the principles of active and passive microwave solid-state devices, including parametric amplifiers, tunnel-diode devices, harmonic generators, bulk-effect devices, and microwave transistors.

203A-B-C. Introduction to Statistical Communication Theory. (3-3-3) I, II, III.

Mr. Heidbreder

Prerequisite: Undergraduate courses in linear transform theory, or consent of instructor.

A study of the mathematical analysis of random signals and noise, the response of systems to random inputs, system synthesis based on statistical performance specifications and applications of the concept of a statistical measure of information content in a signal.

EE 203D. Detection Theory. (3) III.

Prerequisite: EE 203A.

Mr. Heidbreder

Hypothesis testing and its application to the formulation of decision rules for the "optimal" detection of signals in a noisy environment. Selection of op-

timality criteria, the derivation of optimum receivers, applications in radar and digital communications. Discussion of estimation theory as it relates to the estimation of parameters of detected signals.

204A-B-C. Advanced Engineering Analysis. (3-3-3) I, II, III. Mr. Gray

Prerequisite: EE 130A-B or equivalent.

Selected topics in advanced mathematics for engineers, including such topics as engineering applications of some higher transcendental functions, asymptotic expansions, calculus of variations, etc.

206A. Machine Methods of Network

Analysis. (3) I.

Mr. Ordnung

Prerequisite: Consent of instructor.

Network formulations appropriate to machine analysis, selected topics in matrix theory and applied numerical analysis, linear network analysis in the frequency domain, linear and nonlinear analysis in the time domain.

206B-C. Network Synthesis. (3-3) II, III.

Mr. Ordnung

Prerequisite: Consent of instructor.

Positive real-function theory, one- and two-port passive realizations, Hilbert transforms, and rational function approximations.

207A-B-C. Projects. (1-6) I, II, III, IV.

The Staff

Graduate research projects to be arranged between students and staff members.

208A-B-C. Optical Systems Theory. (3-3-3) I, II, III. Mr. Wade

Prerequisites: EE 144A-B or equivalent, EE 146A-B or equivalent.

Communication theory techniques, including Fourier transforms and autocorrelation functions, as applied to optical systems. Mathematical descriptions due originally to Rayleigh, Sommerfeld, Abbe, Michelson, Kirchhoff, Fresnel and others. Coherent image formation, holographic wavefront reconstruction, optical-data processing and other topics.

210. Special Topics in Electrical

Engineering. (1-6) I, II, III, IV.

The Staff

Special seminars or group study on research subjects of current interest. Course conduct to be arranged.

211A-B. Quantum Electrodynamics for Engineering Applications. (3-3) II, III.

Mr. Wade

Prerequisite: EE 160A or consent of instructor.

Dirac formulation. "Ket" and "Bra" vectors. Linear phonons. Interaction between electromagnetic fields and charged particles. Interaction of radiation and matter typical to problems in quantum electronics and non-linear optics. Directed toward engineering applications rather than high-energy physics.

230A-B-C. Solid-State Device Design, and Processing. (4-4-4) I, II, III.

Mr. Heald, Mr. Ordnung

Prerequisite: EE 160A-B-C or equivalent.

Consideration of solid-state device design, especially as it pertains to fabrication and processing. The

course is supported with a laboratory containing diffusion furnaces, an epitaxial reactor, evaporators, interferometer, four-point probe, scanning electron microscope, photo-masking facility, and associated equipment.

236A-B-C. Linear Active Circuits.

(3-3-3) I, II, III.

Mr. Allen

Prerequisite: EE 136A-B or consent of instructor.

An introduction to the analysis and design of discrete and integrated linear active networks from dc to video frequencies. Topics include stability, sensitivity, computer-aided analysis, operational amplifiers, functional design, applications of linear IC's and RC active networks.

239A-B-C. Special Topics in Circuit Theory.

(3) I, II, III.

Mr. Allen

Prerequisite: Consent of the instructor.

A study of topics of current interest in circuit theory. Includes areas of active and nonlinear circuits, network and system theory, computer-aided analysis and design, digital filters and circuits, topology, graph theory, and solid-state circuits. May be repeated for credit with consent of instructor.

247A. Systems Science I—Systems Optimization by Programming Methods. (4) I.

Mr. Stear

Prerequisite: EE 147B or consent of instructor.

Linear programming models, solution methods. Functions of several variables and nonlinear programming models. Partial derivatives, gradients; the implicit function theorem; classical optimization methods for nonlinear programming models, Kuhn-Tucker conditions. Computation methods for nonlinear programming problems. Dynamic programming models; solution techniques.

247B. Systems Science II—Dynamic Systems Optimization. (4) II.

Mr. Stear

Prerequisite: EE 147B and EE 247A, or consent of instructor.

Function spaces; formulation of dynamic systems optimization problems as constrained variational calculus problems. Necessary and sufficient conditions for extrema of general functionals. First-order necessary conditions for optimum dynamic systems. Necessary conditions for singular problems. Optimum feedback systems. Computational algorithms.

247C. Systems Science III—Optimal Estimation and Filtering. (4) III.

Mr. Stear

Prerequisites: EE 247A-B, EE 203A.

Random variables; random vectors; conditional density functions; conditional expectations. Covariance matrices; jointly Gaussian random vectors. Basic optimal estimation theory. Random vector sequences; processes. Calculus-in-the-mean for random processes. Optimum sequential estimation theory; Kalman filtering. Optimal data smoothing.

248A. Systems Science IV—Advanced Dynamic Systems Optimization. (4) I.

Mr. Stear

Prerequisite: EE 247A-B.

Necessary conditions for optimum dynamic systems based on second variation. Conjugate point conditions, extremal fields, sufficient conditions for

weakly optimum dynamic systems. Sufficient conditions for strongly optimum dynamic systems. Hamilton-Jacobi theory of optimum dynamic systems, dynamic programming. Second-order computation methods.

248B. Systems Science V—Optimal Nonlinear Estimation and Filtering.

(4) II.

Mr. Stear

Prerequisite: EE 247C.

Optimal nonlinear sequential estimation and filtering—discrete time: approximately optimal estimation and filtering using Taylor-series expansions, quasi-moments, Gaussian sum approximations, and lumped-mass approximations. Stochastic integrals and differential equations. Optimal nonlinear estimation and filtering—continuous time. Innovation processes. The representation theorem.

251A-B. Engineering Magnetics. (3-3) II, III.

Mr. Baldwin

Prerequisite: EE 151 or consent of instructor.

Course content is variable, depending on interests of students. Digital recording: disc, tape and drum. Advanced magneto-optic memories. Content addressable memory. Real-life aspects of thin films. Analog tape recording. Microwave ferrite and garnet devices.

252A. Sequential Machines and

Automata Theory. (3) I.

Mr. Howard

Prerequisite: EE 152A-B or consent of instructor.

Definition and representation of finite state automata and sequential machines. Equivalence of states and machines, congruence, reduced machines, and analysis and synthesis of machines. Decision problems of finite automata, partitions, covers, generalized and incomplete machines. Regular expressions and machine specifications.

252B. Advanced Digital Computer

Design and Organization. (3) II.

Mr. Howard

Prerequisite: EE 152A-B or consent of instructor.

Computer system design problems such as logic and organization of digital arithmetic processors, algorithmic acceleration, storage management, memory utilization, error detection in digital arithmetic. Comparison of examples of various solutions to system design problems. Selected topics on novel computer organizations.

252C. Advanced Topics in Switching

Theory. (3) III.

Mr. Howard

Prerequisite: EE 152A-B or consent of instructor.

Threshold logic; basic properties, threshold functions, realization. Ternary switching circuits. Majority and minority logic. Switching circuit reliability. Multilevel synthesis techniques. Comparison of algebraic simplification methods.

260A-B. Principles of Quantum Electronics.

(3-3) II, III.

Mr. Fontana

Prerequisites: EE 160A and EE 144A or equivalent.

Energy levels in atoms, ions, and molecules. Interaction between radiation and quantized systems. Stimulated emission devices. Optical resonators. Lasers. Electro-optic devices and nonlinear effects.

EE 270A-B. Special Problems in Biomedical Engineering. (3) I, II. Mr. Horvath

Prerequisite: Consent of instructor.

Biomedical engineering approach to physiological systems using small-group interactive-study approach. Brief discussion of physiological basis of system and diseases related to system followed by conceptual development of models, evaluation and development of instrumentation and diagnostic tools and procedures. Use of computer technology and systems design for system involved.

273A-B-C. Software Architecture. (3-3-3)

I, II, III.

Mr. Presser

Prerequisite: Consent of instructor.

Advanced topics in the structure, design and evaluation of software systems. Integrated consideration of architectural software/hardware tradeoffs.

275A-B-C. Special Topics in Computer**Programming, Design, and Applications.**

(3-3-3) I, II, III.

The Staff

Prerequisite: Consent of instructor.

Computer seminar or group study on computer topics of current interest, including minicomputers, computer graphics, hybrid computations, simulation, advanced compiler theory, on-line time-sharing systems and pattern recognition. May be repeated for credit with consent of instructor.

276A-B-C. Special Topics in Solid-State**Devices.** (4-4-4) I, II, III. Mr. Ordnung,

Mr. Heald, Mr. Skalnik

Prerequisite: Consent of instructor.

Solid-state device group study seminar on topics of current interest which may include surface and bulk phenomena, devices of interest to integrated circuits, and optoelectronics, and their fabrication. May be repeated for credit with consent of instructor.

596. Directed Research. (1-6) I, II, III, IV.

The Staff

Prerequisites: None.

Research, either experimental or theoretical, may be undertaken by properly qualified graduate students under the direction of a faculty member.

EE 597. Individual Studies for M.S. Comprehensive Examinations and Ph.D. Examinations. (1-12) I, II, III, IV. The Staff

Individual studies for M.S. comprehensive examinations and Ph.D. examinations. Maximum of 12 units per quarter. S/U grading. Instructor is normally student's major professor or Chairman of doctoral committee. No unit credit allowed toward advanced degree. Enrollment limited to 24 units per exam.

599. Ph.D. Dissertation Research and**Preparation.** (1-6) I, II, III, IV. The Staff

Prerequisite: Permission of chairman of student's doctoral committee.

Research and preparation of dissertation.

 MECHANICAL ENGINEERINGGary M. Connell, Ph.D., *Associate Professor of Mechanical Engineering.*William T. Thomson, Ph.D., *Professor of Engineering.**Thomas P. Mitchell, Ph.D., *Professor of Engineering Mechanics (Chairman of the Department).**William C. Kuby, Ph.D., *Associate Professor of Mechanical Engineering.*Roy S. Hickman, Ph.D., *Associate Professor of Mechanical Engineering, (Vice Chairman of the Department of Mechanical Engineering).*John C. Bruch, Ph.D., *Assistant Professor of Engineering Mechanics.*Robert B. Roemer, Ph.D., *Assistant Professor of Mechanical Engineering.*Ekkehard Marschall, Ph.D., *Assistant Professor of Mechanical Engineering.*Frederick Milstein, Ph.D., *Assistant Professor of Mechanical Engineering.*James P. Vanyo, Ph.D., *Assistant Professor of Mechanical Engineering.*Harris Meisel, M.D., *Research Engineer.***UNDERGRADUATE PROGRAMS**

Schedules should be planned to meet the requirements in General Education and in the major. Detailed descriptions of these requirements are listed in this catalog under the heading "College of Engineering," and in the separate bulletin *College of Engineering Announcements*.

The following lower division courses are required (67 units): Engr. 3A-B; ME 10; Chemistry 1A-B-C; Chemistry 1AL, 1BL, 1CL; Math 3A-B-C; Math 5A-B-C; ME 15; EE 6A-B; Physics 7A-B-C; and Physics 7BL, 7CL.

Upper division required courses are (62 units): ME 140A-B; ME 150; ME 151A-B-C;

* Absent on Leave 1973-74.

* Absent on Leave in Residence 1973-74.

ME 152A-B; ME 159; ME 159L; ME 163; ME 155; ME 156A; and ME 156AL, 156BL, 156CL; plus 12 units of departmental electives.

The Mechanical Engineering elective courses available permit students a degree of specialization in the areas of systems engineering, biomedical engineering, ocean engineering, aerospace engineering, and environmental engineering.

THE DEGREE OF MASTER OF SCIENCE

Requirements

1. In addition to the general requirements for admission to graduate status, the department requires a bachelor's degree or its equivalent from a school or college of recognized standing.

2. Applicants with undergraduate preparation that is deemed inadequate may be required to take additional courses.

3. The degree is administered under Plan I and Plan II. Plan I requires 30 units of course credit approved by the departmental director of graduate studies, with a minimum of 15 units in approved graduate engineering courses. The remaining credits may be chosen from 100- or 200-level courses in mechanical engineering or other branches of engineering, mathematics or science, as approved by the Department. Each student in Plan I will pursue a research project which will be approved by the Mechanical Engineering Department, the results of which will be presented as a thesis.

Plan II requires 36 units of course credit approved by the departmental director of graduate studies, with a minimum of 24 units in approved graduate engineering courses. The remaining credits may be chosen from 100- or 200-level courses in mechanical engineering or other branches of engineering mathematics or science as approved by the Department. The Plan II program will culminate in a written comprehensive examination, in the subjects studied.

Fields of study center in the disciplines of thermal sciences, solid mechanics, fluid mechanics, material sciences, design, and biomedical engineering.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. Admission:

Acceptance for admission to the Doctor of Philosophy program is subject to the general admission requirements of the Graduate Division. In addition, a Master of Science degree or equivalent and successful completion of the departmental screening examination, which is identical to the M.S. comprehensive examination, is required.

2. Preparation:

The student must demonstrate his competence in a major field by successfully passing a written examination. Competence in two minor fields, one of which may be outside the department, is also required. Completion of minor field requirements is obtained through acceptable course work performance as approved by the departmental graduate advisory committee.

3. Advancement to candidacy:

The student will be advanced to candidacy after completing the major and minor field requirements and an oral qualifying examination in his major field of study.

4. Dissertation:

The emphasis in the Ph.D. program is on the ability to correlate knowledge in the pursuit of original research. The results of the research shall be successfully defended by the student in an oral examination and presented as a dissertation in accordance with the regulations of the Graduate Division.

TEACHING CREDENTIALS

Either a major or a minor in Engineering may serve as an appropriate part of the program of studies required for a junior college teaching credential in California. A student wishing to secure this credential should confer with designated counselors in the College of Engineering and in the Graduate School of Education.

Mechanical Engineering

Lower Division Courses

10. Introduction to Engineering Mechanics. (4) III. The Staff

Prerequisite: Math 3A; Math 3B may be taken concurrently.

Kinematics & Dynamics of a particle. Forces and free-body diagrams. Momentum, work, energy and moment of momentum. Motion under electric, magnetic, gravitational and mechanical forces.

15. Statics/Strength of Materials. (4) III. The Staff

Prerequisites: ME 10, Math 5A.

Hooke's law and properties of structural materials. Method of sections and virtual work and energy methods. Design applications to engineering structures, problems of tension, torsion, flexure and combined loading. Design beyond the elastic limit.

95. Introduction to Mechanical Engineering. (1) I, II, III. The Staff

Prerequisite: Consent of instructor.

Participation in design projects in the laboratory or machine shop. Projects may be student- or faculty-originated depending upon student interest and consent of faculty member. Assistance to senior design project groups may also be acceptable with consent of the project faculty adviser. May be repeated up to six units.

Upper Division Courses

102. Physical Properties of the Ocean. (4) II. The Staff

Prerequisite: Junior standing.

Introduction to the world's oceans. Chemical composition. Pressure and temperature distribution. Waves, currents, tides. Mixing processes, turbulence, stratification. Shores and shore processes.

103. Introduction to Marine Technology. (4) III. The Staff

Prerequisite: ME 102.

Materials and corrosion. Pressure vessel technology. Surface ships. Submerged structures. Hydrostatics and hydrodynamics; cavitation. Dynamics of underwater vehicles. Propulsion and control. Life support systems. Communication.

105. Introduction to Statistical Thermodynamics. (4) I. Mr. Milstein

Prerequisites: ME 10 and mathematics of the Lower Division of the Engineering curriculum.

Elements of quantum mechanics and classical thermodynamics; thermodynamic equilibrium and entropy. Statistical nature of thermodynamics. Maxwell-Boltzmann, Fermi-Dirac, and Bose-Einstein statistics. Thermodynamic properties of matter. Paramagnetism, ionization, thermionic emission, free electron theory of metals, semiconductors.

110. Engineering Systems and the Environment. (3) III. The Staff

Prerequisite: Junior standing in engineering, or equivalent.

Sources of pollution (air, water, noise, thermal radioactive) and resource waste. Short and long-

range effects. Political, societal, and cost considerations. Mathematical models of processes and systems, and development of alternatives.

125. Special Topics in Mechanical Engineering. (4) I, II, III. The Staff

Prerequisite: Consent of instructor.

Individual courses each concentrating on one area in the following subjects in mechanical engineering: design, fluid mechanics, heat transfer, combustion, structural dynamics, materials, biomechanics and modern developments.

130. Applied Hydro- and Aerodynamics. (3) II. The Staff

Prerequisite: ME 152A.

Drag, lift, other fluid dynamic forces and moments. Performance. Elements of flight dynamics. Airfoils; wings; bodies. Numerical treatment by superposition of basic flows. Experimental and computer methods. Course is project-oriented.

132. Trajectory and Orbital Mechanics. (4) I. Mr. Thomson

Prerequisites: ME 10, and mathematics of the lower division engineering curriculum.

Fundamentals of particle dynamics; two-body and central force problems; orbit determination; transfer orbits; orbital perturbations; long-range ballistic trajectories; powered flight trajectories; re-entry dynamics; lunar and interplanetary trajectories.

140A-B-C. Theoretical Analysis in Mechanical Engineering. (4-4-4) I, II, III. Mr. Bruch

Prerequisite: Junior standing.

Introduction to the mathematical models of engineering problems and the methods of solution of the problems.

150. Introduction to Design. (1) III. The Staff

Prerequisite: Upper Division standing.

Introduction to the design process. Conceptualization of a design project in preparation for course ME 156.

151A. Thermosciences. (4) I. Mr. Marschall

Prerequisite: Upper Division standing.

The basic laws and concepts of thermodynamics such as pressure, temperature, energy and entropy are discussed and their application to various systems are considered. Consideration is given to the molecular structure and physical properties of the solid, liquid, and gaseous states.

151B. Thermosciences. (4) II. Mr. Marschall

Prerequisite: ME 151A.

Application of basic thermodynamic principles and laws to energy conversion systems; gas mixtures; statistical thermodynamics; irreversible thermodynamics; conduction heat transfer.

151C. Thermosciences. (4) III. Mr. Marschall

Prerequisites: ME 151B, ME 152A, concurrent enrollment in ME 152B.

The study of the fundamentals of heat transfer using the phenomena of conduction, radiation and convection; application and analysis of steady state, transient, and combined mode problems.

152A. Fluid Mechanics. (4) I. Mr. Kuby

Prerequisite: Lower division courses in engineering, physics and mathematics.

Introduction to the fundamental concepts in Fluid Mechanics and basic fluid properties. Basic equations of fluid flow. Dimensional analysis and similitude. Hydrodynamics.

152B. Fluid Mechanics. (4) II. Mr. Kuby

Prerequisite: ME 152A.

Incompressible viscous flow. Boundary-layer theory. Introductory considerations for compressible flow. One dimensional and multidimensional compressible flow. Flow in open channels.

155. Introduction to Control Systems.

(4) II.

Mr. Connell

Prerequisite: ME 140A-B.

Study of linear feedback systems, transfer functions, stability, root locus, Nyquist, frequency response and state space techniques.

156A. Engineering Materials and Design

Concepts. (2) I.

The Staff

Prerequisite: ME 159 or consent of instructor.

Selection of engineering materials, failure theory, non-metallic materials, welding, machine shop procedure, and the design of machine elements. Secondary not required of non-majors.

156AL. Engineering Materials and Design

Concepts. (1) I.

The Staff

Prerequisites: Concurrent enrollment in ME 156A and ME 150.

Nature of engineering design. Carrying out of preliminary design. Continuation of design projects originated in ME 150.

156BL-CL. Design. (3-3) II, III. The Staff

Prerequisites: ME 156A, AL.

Continuation of design projects begun in ME 156AL.

157. Operations and Systems. (4) III.

Mr. Vanyo

Prerequisite: ME 140A-B or consent of instructor.

An introduction to the treatment of engineering systems with complex interacting technical and socio-economic parts. Numerical and analytical optimization techniques. An introduction to probability and its application to decision making and engineering systems.

158. Kinetic Theory and Statistical

Thermodynamics. (4) III. Mr. Hickman

Prerequisite: ME 151A-B.

Theory, Maxwell-Boltzmann equilibrium distribution, specific heat, transport properties, and quantum statistics.

159. Properties of Materials. (3) III.

Mr. Milstein

Prerequisite: Mathematics of the lower division of the engineering curriculum plus concurrent enrollment in ME 159L.

Bonding in solids, crystallography, alloys, phase diagrams, and diffusion. Theory of plastic deformation and fracture of metals.

159L. Properties of Materials. (1) III.

Mr. Milstein

Prerequisite: See ME 159.

Experiments in properties of materials. Plastic deformation, yield strength of alloys, annealing behavior of metals and alloys, electrical resistivity, and magnetic properties.

160. Gas Dynamics and Propulsion.

(3) I.

Mr. Kuby

Prerequisites: ME 151A-B, 152A-B.

Resume of fundamentals of gas dynamics, thermodynamics, and combustion. Subsonic and supersonic two-dimensional flows. Method of characteristics. Normal and oblique shocks. Analysis of compressible flow through ducts, nozzles, and in gas turbines, rockets, and ramjets.

161. Vibrations in Linear Systems. (4) III.

Mr. Thomson

Prerequisite: Consent of instructor.

Topics relating to vibration in mechanical systems; exact and approximate methods of analysis, matrix methods, generalized coordinates and Lagrange's equations, applications to systems with several degrees of freedom and to continuous systems.

163. Intermediate Dynamics.

(4) III.

Mr. Thompson

Prerequisite: ME 10.

Kinematics in various coordinates. Particle dynamics, Newton's laws and theorems of momentum and energy. System of particles. Plane motion of rigid bodies, relative motion. General motion of rigid bodies.

166. Introduction to Theory of Elasticity.

(4) II.

The Staff

Prerequisite: ME 140A.

Fundamentals of classical theory of elasticity and applications. Thermodynamics of deformation. Elastic properties of crystals. Equilibrium of beams, plates, and shells. Elastic wave propagation. Vibration of beams and plates.

170A. Introductory Biomedical

Engineering. (3) I.

Mr. Roemer

Prerequisite: Senior standing in engineering.

Survey of application of engineering principles and methods to problems arising in the life sciences (medicine and biology); analysis of the function and principles of operation of living systems; modeling and simulation of physiological regulatory systems; physiological philosophy of instrument design; etc.

170B-C. Biomedical Engineering.

(3-3) II, III.

Mr. Roemer

Prerequisites: ME 170 and consent of instructor.

Detailed investigation of specific biomedical engineering problems; tours of local medical facilities; demonstrations of physiological and medical instrumentation systems. Topics to be determined by progress in various fields of biomedical engineering.

175. Systems Simulation. (3) II. The Staff

Prerequisite: Upper division standing in engineering or equivalent.

Introduction to the simulation of "real" time-dependent physical and non-physical systems. Basic control theory. Elemental linear and nonlinear func-

tions and policies. Quantification of qualitative descriptions. Modeling reality; isolation of system from surroundings, development of structure, determination of functions and policies. Methods of computer study and dynamic simulation. Applications.

180. Law and Technology.

(3) II.

Mr. Vanyo

Prerequisite: Junior standing in engineering or consent of instructor.

Survey of modern law as a combination of common law, constitutional requirements, legislation, and administrative regulations. Interaction between law and technology in research and development, production and commerce, and business organizations. Combined legal-technical system approaches to current problem areas.

195. Directed Research. (1-4) I, II, III.

Prerequisite: Consent of instructor.

The Staff

Directed research projects open to qualified undergraduates in Mechanical Engineering or related fields. Research projects are to be arranged by student and staff member. The course is designed to give unusual undergraduates early experience in research. Not acceptable for required departmental electives.

199. Independent Studies in Mechanical

Engineering. (1-5) I, II, III. The Staff

Directed individual study, normally experimental, open to students in the Department of Mechanical Engineering who have completed a minimum of 125 units.

Graduate Courses

200. Professional Seminar. (1) I, II, III.

Prerequisite: Graduate standing.

The Staff

A series of weekly lectures given by University staff members and outside experts in the fields of research or development pertinent to mechanical engineering.

201. Advanced Dynamics. (3) I. Mr. Vanyo

Prerequisite: ME 163 or equivalent.

Advanced dynamics of mechanical systems; variational techniques; Hamilton's principle; Lagrange's equations; conservation theorems; matrix kinematics and dynamics of rigid bodies in general motion.

202. Advanced Dynamics. (3) II. Mr. Vanyo

Prerequisite: ME 201 or consent of instructor.

Advanced dynamics of electromechanical systems; Hamilton's principle and Lagrange's equations generalized to electrical networks; analysis of electromechanical transducers; frequency response; introduction to canonical transformations; Hamilton-Jacobi equations.

¹To be offered in odd-numbered years except upon sufficient demand. Academic year 1973-74 is an odd-numbered year.

²To be offered in even-numbered years except upon sufficient demand. Academic year 1974-75 will be an even-numbered year.

*203. Nonlinear Mechanics. (3) III.

Prerequisite: ME 201.

Mr. Thomson

Phase plane analysis; criteria of stability; study of Van der Pol. Duffing, Mathieu equations; Poincaré-Bendixon theorem; method of Krylov-Bogoliuboff; equivalent linearization perturbation methods.

*214. Rotation of Nonrigid Bodies and Fluids.

(3) II.

Mr. Vanyo

Prerequisites: ME 201 and ME 219 or consent of instructor.

Kinematics and dynamics of general rigid body motion. Extension to nonrigid bodies. Effects of energy dissipation on satellite attitude stability. Navier-Stokes equations in rotating coordinates and vorticity coordinates. Processing boundary layer theory. Mixed system inertia tensors.

*216. Stochastic Dynamics.

(3) II.

Mr. Connell

Prerequisite: ME 201.

Analysis of systems having stochastic solutions or inherent random parameters. Measurement and analysis of random data; stationary, ergodic, and non-stationary random processes; power spectra, analog and digital data processing, filtering; Monte Carlo methods, stochastic stability, Fokker-Planck equation. Application to random vibration, earthquake excitation, and ocean wave excitation.

219. Continuum Mechanics. (3) I.

Mr. Mitchell

Prerequisite: ME 152A-B or equivalent.

Matrices and tensors; stress deformation and flow; compatibility conditions; constitutive equations; field equations and boundary conditions in fluids and solids; applications in solid and fluid mechanics.

220. Inviscid Flow. (3) I.

Mr. Hickman

Prerequisite: ME 219, concurrently.

Two-dimensional and axisymmetric flows. Stream functions. Vorticity and circulation. Stokes, Gauss, vortex theorems. Irrotational motion. Velocity potential. Basic solutions and superpositions; distributed singularities. Conformal mapping.

221. Viscous Flow. (3) II.

Mr. Hickman

Prerequisites: ME 219, 220.

Navier-Stokes equations, vorticity equation. Exact solutions. Flow at low (Stokes, Oseen) and at high Reynolds number. Boundary layer equations; similarity solutions, approximate solutions; numerical methods. Stability of laminar flows, and transition to turbulence.

*222. Compressible Flow. (3) III. The Staff

Prerequisites: ME 151A-B or equivalent, ME 219.

Review of one-dimensional and oblique shock waves. Prandtl Meyer expansion. Method of characteristics for two-dimensional steady, one-dimensional unsteady and axisymmetric flow. Crocco's Theorem. Viscous compressible boundary layer.

*224. Physical Gas Dynamics. (3) III.

Prerequisites: ME 222 and 251.

Mr. Kuby

Behavior of equilibrium and nonequilibrium gas

flows at very high temperatures including vibrational, translational, chemical, and radiative effects.

225. Special Topics in Mechanics.

(4) I, II, III.

The Staff

Prerequisite: Advanced background and consent of instructor.

Individual courses, each concentrating on one of the following subjects in fluid and solid mechanics: boundary layers, turbulent flow, real fluids, physical gas dynamics, plasma dynamics, combustion, gyro-dynamics, structural dynamics, stability, materials, biomechanics, modern developments.

226. Applied Numerical Methods for

Engineering. (4) I.

Mr. Bruch

Prerequisite: ME 140A-B or consent of instructor.

Interpolation and approximation. Numerical integration. Iteration. Solution of equations and systems of algebraic equations. Numerical solution of ordinary differential equations. Finite difference, weighted residuals and finite element methods for the solution of partial differential equations.

231. Plasma Dynamics. (3) II.

Mr. Mitchell

Prerequisite: ME 219 and consent of instructor.

Particle and fluid description of plasma; Maxwell's equations; Alfven's theorem; equilibrium configurations; one-dimensional flows; magneto-hydrodynamic waves; shock waves; stability.

234A-B. Structural Dynamics.

(3-3) I, II.

Mr. Connell

Prerequisite: ME 163 or equivalent.

Behavior of elastic systems; system constraints; normal modes; virtual work method; generalized coordinates; Lagrange's equations; influence functions; matrix methods; damping; frequency response; random excitation.

235A-B. Quantum Mechanics. (4) II, III.

Mr. Mitchell

Prerequisite: Consent of instructor.

Basic particle quantum mechanics; state vectors, mathematical and physical development; solutions of Schrodinger's equation; one dimensional applications; two state systems; spin; Heisenberg's formulation; fundamental dynamics; angular momentum; three dimensional applications; perturbation theory; identical particles; radiation.

239. Conduction Heat Transfer. (3) I.

Mr. Roemer

Prerequisite: Undergraduate course in heat transfer.

Development of mathematical representation of conduction heat transfer and techniques available for analytical, analog and numerical solutions.

240. Convective Heat Transfer. (3) II.

Mr. Roemer

Prerequisite: Undergraduate course in heat transfer.

Solutions to the momentum, continuity and energy equations will be considered for both natural and forced convection. Applications to industrial problems, convective transfer in high-speed flows, heat transfer in rarefied flows, and the effects of chemical reactions on convective rates will be included.

241. Radiative Energy Transfer. (3) III.

The Staff

Prerequisite: Undergraduate course in heat transfer.

The physical nature of radiation and of its interaction with matter; conservation principles in radiative transfer and their relation to molecular and convective processes; and thermodynamic equilibrium with consideration of nondimensional parameters will be considered. Applications to astrophysics, combustion, and plasma technology will be discussed.

250. Advanced Thermodynamics. (3) I.

Prerequisite: ME 151A-B.

Mr. Marschall

An extended treatment of the fundamentals of classical thermodynamics, including availability and reversibility, the chemical potential, properties of matter, thermochemistry, chemical equilibrium of real gases, and gas mixtures.

251. Statistical Thermodynamics. (3) III.

Prerequisite: ME 151A-B.

The Staff

An extended treatment of the fundamentals of statistical thermodynamics, equilibrium distributions, properties of gases, liquids and solids.

260A-B. Engineering Materials.

(3-3) II, III.

Mr. Milstein

Prerequisite: Graduate standing in engineering or consent of instructor.

Introduction to modern concepts in materials science; application of solid state and thermodynamic theory to the study of properties of materials of technological interest. Elastic and plastic deformation; imperfections; alloying theory; paramagnetism and ferromagnetism; thermal properties of materials (specific heat, electron emission); superconductivity.

594AA-ZZ. Special Topics.

(1-4) I, II, III.

The Staff

Prerequisite: Graduate standing.

595AA-ZZ. Group Studies.

(1-4) I, II, III.

The Staff

Prerequisite: Graduate standing.

596AA-ZZ. Directed Reading and Research.

(1-6) I, II, III.

The Staff

Prerequisite: Consent of instructor.

597. Individual Study for Master's Comprehensive Examinations and Ph.D.

Examinations.

(1-12) I, II, III.

The Staff

Prerequisite: Graduate standing.

598AA-ZZ. Master's Thesis Research and Preparation. (1-12) I, II, III.

Prerequisite: Graduate standing.

The Staff

599AA-ZZ. Ph.D. Dissertation Research and Preparation.

(1-12) I, II, III.

The Staff

Prerequisite: Graduate standing.

¹ To be offered in odd-numbered years except upon sufficient demand. Academic year 1973-74 is an odd-numbered year.

² To be offered in even-numbered years except upon sufficient demand. Academic year 1974-75 will be an even-numbered year.

ENGLISH

- Edgar Bowers, Ph.D., *Professor of English*.
 Joseph Foladare, Ph.D., *Professor of English*.
 William Frost, Ph.D., *Professor of English*.
 Earl Leslie Griggs, Ph.D., D.Litt., *Professor of English, Emeritus*.
 Donald L. Guss, Ph.D., *Professor of English*.
 Edward Loomis, Ph.D., *Professor of English*.
 J. Chesley Mathews, Ph.D., *Professor of English*.
^{2,3}Patrick J. McCarthy, Ph.D., *Professor of English*.
 Marvin Mudrick, Ph.D., *Professor of English*.
 Donald R. Pearce, Ph.D., *Professor of English*.
 Benjamin T. Sankey, Ph.D., *Professor of English*.
 Alan Stephens, Ph.D., *Professor of English*.
 Lawrence Willson, Ph.D., *Professor of English*.
³Sheridan Blau, Ph.D., *Associate Professor of English*.
 Frank C. Gardiner, Ph.D., *Associate Professor of English (Chairman of the Department)*.
 William S. Marks, III, Ph.D., *Associate Professor of English*.
¹John M. Ridland, Ph.D., *Associate Professor of English*.
¹Herbert N. Schneidau, Ph.D., *Associate Professor of English*.
 Logan H. Speirs, M.A. (Cambridge), *Associate Professor of English*.
 Douwe Stuurman, B.Litt. (Oxon.), *Associate Professor of English*.
 Homer D. Swander, Ph.D., *Associate Professor of English*.
³Everett Zimmerman, Ph.D., *Associate Professor of English*.
 H. Porter Abbott, Ph.D., *Assistant Professor of English*.
 David J. Aitken, Ph.D., *Assistant Professor of English*.
¹Steven Allaback, Ph.D., *Assistant Professor of English*.
 Russell Astley, Ph.D., *Assistant Professor of English*.
 Watson G. Branch, Ph.D., *Assistant Professor of English*.
³Norman B. Council, Ph.D., *Assistant Professor of English*.
 Walter Davis, Ph.D., *Assistant Professor of English*.
 Edward T. Duffy, Ph.D., *Assistant Professor of English*.
 John R. Elliott, Ph.D., *Assistant Professor of English*.
¹Robert A. Erickson, Ph.D., *Assistant Professor of English*.
¹Michael Fishbein, Ph.D., *Assistant Professor of English*.
 Christopher F. Givan, Ph.D., *Assistant Professor of English*.
 Melvyn Haberman, Ph.D., *Assistant Professor of English*.
 Richard Helgersson, Ph.D., *Assistant Professor of English*.
 Stephen Lacey, Ph.D., *Assistant Professor of English*.
 Anne Lehman, Ph.D., *Assistant Professor of English*.
 Lawrence Levin, Ph.D., *Assistant Professor of English*.
 Stephen J. Miko, Ph.D., *Assistant Professor of English*.
⁴Michael W. O'Connell, Ph.D., *Assistant Professor of English*.
 Jonathan Ramsey, Ph.D., *Assistant Professor of English*.
 Thomas R. Steiner, Ph.D., *Assistant Professor of English*.
²Albert Wachtel, Ph.D., *Assistant Professor of English*.



- H. Daniel Peck, M.A., *Acting Assistant Professor of English*.
 Robert P. Brandts, M.A., *Lecturer in English*.
 Elliott Evans, M.A., *Lecturer in English*.
 Michael A. Fernandez, M.A., *Lecturer in English*.
 Portia Liggins, M.A.T., *Lecturer in English*.
 Roy Moore, M.A., *Fellow of King's College, Lecturer in English*.

¹ Absent on Leave Fall 1973.

² Absent on Leave Winter 1974.

³ Absent on Leave Spring 1974.

⁴ Absent on Leave 1973-74.

Robert H. Pierce, M.A., *Lecturer in English.*
 Eileen A. Pidgeon, M.A., *Lecturer in English.*
 Kenneth Rexroth, *Lecturer in English.*
 Toni Thornton, M.A., *Lecturer in English.*
 Kim Ziegel, M.A., *Lecturer in English.*

The Department of English (1) provides all undergraduates with the opportunity for guided literary study, through the 1A and 1B courses; (2) makes available to all students a wide range of courses that may be taken for credit as electives; (3) offers a major leading to the Bachelor of Arts degree; (4) offers graduate programs leading to the M.A. and Ph.D. degrees; and (5) collaborates with the Departments of Foreign Languages and Literatures in the Comparative Literature undergraduate major program.

The English major pursues a planned program of English courses and cognate studies from which he can acquire a sound and orderly knowledge of our literature and the wisdom and exhilaration available in it, as well as a poised critical sense and some ability in graceful and efficient expression.

PREPARATION FOR THE MAJOR

To prepare for the major the student must pass courses 1A–1B or equivalent, Classics 37, 38, 40 or 102, English 20, 30, and 40, with an average grade of C or higher, and History 4A–4B–4C. (Upper division majors may satisfy the History requirement by substituting one of the following sequences: History 111A–B, 113A–B, 115–116, 140A–B, or 141A–B.)

All students are urged to confer with one of the departmental undergraduate advisers at the time of declaring the English major, and should consult an adviser about their academic program at least once before their senior year. Students interested in a major in Comparative Literature (English plus a foreign literature) may consult specially designated undergraduate advisers in the English Department.

THE MAJOR

For his upper division program, the student must take twenty units in the following courses, as far as possible in the order listed: English 117A–117B (Shakespeare), 162 (Milton), 152A (Canterbury Tales), and 197 (Senior Seminar). Twenty units in electives will be required within the Department. (102A–102B–102C, 106G, 117E, and 183 may not be used to fulfill requirements for the major.)

Students who had commenced working toward the English major before the above requirements came into effect (July, 1967) may substitute, without penalty, courses now available for courses formerly required. Similarly, students who have already taken courses formerly required for the English major but no longer listed here will be able to substitute them for comparable courses in the above list. Each substitution requires a faculty adviser's approval.

History 140A–B (History of England) is strongly recommended for all English majors.

Foreign Language Requirement. English majors may fulfill the language requirement by completing either 1) the sixth course or its equivalent in Greek, Latin, French, German, Italian, Russian or Spanish; or 2) five literature courses, of which three must be upper division foreign literature or literature in translation courses. Students who wish to follow the second option must consult with a department adviser at the end of the sophomore year in order to establish a plan of study. In selecting the option, the student should keep the following in mind: a) if he wishes to be elected to Phi Beta Kappa, he must take 1) above; b) if he is interested in graduate study, he should consult the prospective graduate schools regarding their language requirements.

GRADUATE PROGRAMS

The department requests that applicants submit a paper written in an upper division English course with their applications.

The department recommends but does not require that the candidate present scores on the Graduate Record Examination.

THE DEGREE OF MASTER OF ARTS

Requirements

A. Courses

Plan A (primarily for students who are also candidates for the Secondary Credential and who do not plan to go beyond the M.A.)

36 units, including a minimum of 28 graduate units of which no more than 8 may be in 297 and, with permission of the Graduate Committee, no more than 4 in 596. Required courses are English 200; and English 110 or 111 or 206 or 207, or their equivalent.

Plan B (for students who have been admitted to the program leading to the Ph.D.)

Same as Plan A, except that, all 36 units must be in graduate courses.

All students should plan their programs in consultation with their Graduate Adviser. Programs should not be filed without his approval.

It is strongly urged that students in their first year of graduate study register for studies courses rather than for seminars. (Consult the quarterly brochure of the department for the list of courses available.)

The content of both studies courses and seminars will vary from quarter to quarter. These courses may, therefore, be repeated for credit.

B. Examinations:

1. Language:

Students must consult with the Graduate Adviser for Languages before taking an examination.

All candidates must pass, as early as possible and in no case later than one quarter before receiving the M.A., a reading examination in French, German, Italian, Russian, Spanish, Latin, or Greek. (This requirement must be fulfilled by the presentation of an ETS score for those languages in which ETS examinations are offered.)

2. Oral Examinations:

Plan A: The candidate must pass, ordinarily during the quarter in which he expects to receive the M.A., but in no case later than the end of his seventh quarter in residence, an oral examination of approximately one hour, in which he should expect that major authors, genres, and literary periods will be covered. A candidate whose educational objectives have changed since he was admitted to graduate study and whose record provides the justification may be permitted to take the Plan B oral examination; to do so, he must receive permission from the Graduate Committee.

Plan B: The candidate must pass, at the same point in his progress, essentially the same kind of oral examination as that described above, except that, since it will serve as the first qualifying examination for the Ph.D., it will be more extensive; it will last approximately two hours.

The examining committee will make one of the following recommendations: (1) Fail; (2) Pass as M.A. candidate, but without permission to continue; (3) Pass, with permission to continue. In all cases, recommendations are reviewed by the Graduate Committee.

Students must consult their Graduate Adviser before requesting any qualifying oral examination.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

A. Completion of the M.A. degree under Plan B.

Candidates who enter with M.A. degrees from other institutions must pass the first

qualifying oral examination (described above, under Oral Examinations, Plan B); they may request the examination as early as their first quarter in residence, but in no case later than the end of their first year. For the language requirement a student entering with an M.A. degree from another institution must supply an ETS score or submit to re-examination no later than one quarter before requesting the first qualifying examination.

B. Courses:

Two two-quarter seminars are to be taken between the first and second qualifying examinations (the student is also encouraged to take other courses in his areas of concentration). The Graduate Committee will accept no more than eight approved units of 596.

C. Examinations:

1. Language:

Students must consult with the Graduate Adviser for Languages before taking an examination.

Before being advanced to candidacy, the student must fulfill either language option (a) or language option (b).

Language option (a):

An examination testing the student's ability to read a plain prose text in any three of the following languages: French, German, Italian, Russian, Spanish, Latin, Greek, and Old English. (This requirement must be fulfilled by the presentation of an ETS score for those languages in which ETS examinations are offered.) Another language may be substituted with the consent of the Graduate Committee and the Graduate Dean. (In the case of Old English, two quarters of course work with a grade of *B* or better may substitute for the examination.) After such an examination, the student will be expected to demonstrate an advanced knowledge of one of these languages, based on an acquaintance with a major literary text or group of texts in the original. This requirement may be satisfied by passing within five years prior to advancement to candidacy, with a grade of *B* or better, an upper division or graduate literature course in the language, or by passing a special examination. (In the case of Old English, a third quarter's work, with a grade of *B* or better, will satisfy the requirement.) The student must satisfy the language requirement before he takes the second qualifying oral examination.

Language option (b):

A demonstration of advanced knowledge of two languages (one of which may be Old English if the Graduate Committee consents). These languages shall have some relevance to a proposed course of doctoral study. Advanced knowledge will be demonstrated as in language option (a).

In certain cases, with the advice of the Graduate Adviser for Languages and the approval of the Graduate Committee, a student who can read one foreign language fluently will be permitted to satisfy the language requirement by demonstrating his ability to translate and interpret a wide range of literary texts in that language. A written examination will normally be required.

2. Oral Examination:

The second qualifying examination, of approximately two hours, will cover three areas of concentration: periods (e.g., the eighteenth century), individual authors (e.g., Shakespeare), or special topics (e.g., theories of poetry). After consultation with the Ph.D. Adviser, the candidate must submit his list—at least one quarter before he requests examination—for the approval of the Graduate Committee. All candidates must take this examination no later than the end of their fourth year of residence.

D. The Dissertation:

After passing the second qualifying examination—or before, if it is possible and practicable—each candidate must submit, for the approval of the examining com-

mittee, a proposal for a dissertation. When approval has been granted, he will write the dissertation under the guidance of the committee. If the committee so recommends, he must defend his completed work in a further oral examination.

TEACHING CREDENTIALS

Either a major or a minor in English may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should consult designated counselors in the Department of English and the Graduate School of Education.

All candidates for elementary and secondary teaching credentials must demonstrate an advanced competence in writing expository prose. This requirement is ordinarily satisfied by completing English 106G or approved alternative courses or by passing a special examination offered by the Department. Secondary credential candidates majoring in English should not enroll in English 106G without first consulting the Department credential adviser.

Candidates for the secondary teaching credential with a major in English must complete English 107 (Practical Criticism) and a course in English language and linguistics in addition to the major specified above.

Students seeking the secondary or junior college credential in English should confer with the English Department credential adviser.

ENGLISH

A more detailed description of English courses (and texts) for the next term are normally available during pre-enrollment in the English Department office. Ask for the Course Outline Booklet.

Lower Division Courses

1A-1B. First Year Reading and Composition. (4-4) I, II, III.

Prerequisite: Satisfaction of Subject A requirement. English 1A-1B or equivalent are prerequisite to all other courses in English.

Intensive reading in, and writing about, selected literary works. Short stories and novels are read in 1A, poetry and drama in 1B.

20. The Literature of the Renaissance. (4) I, II, III.

A survey of English literature of the period 1500-1660, excluding Shakespeare and Milton. For English majors. English 20 should normally be taken before English 30 and 40.

Continuing emphasis will be placed on developing writing skills in 20, 30, 40.

30. The Literature of the Restoration and Eighteenth Century. (4) I, II, III.

A survey of English literature of the period 1660-1800. For English majors. English 30 should normally follow English 20 and precede English 40.

Continuing emphasis will be placed on developing writing skills in 20, 30, 40.

35. Introduction to the Study of Poetry. (4) I, II, III.

36. Introduction to the Novel. (4) I, II, III.

37. Introduction to Drama. (4) I, II, III.

38. World Literature—Ancient. (3) (SS. Only)

Close reading in translation of selected authors, such as Homer, the Greek dramatists, Plato, Virgil. Satisfies English major requirement in Classics.

39. World Literature—Medieval through Eighteenth Century. (4)

Reading in translation, of selected authors such as Dante, Cervantes, Montaigne, Voltaire.

40. The Literature of the Nineteenth Century. (4) I, II, III.

A survey of English literature of the period 1800-1900. For English majors. English 40 should normally be taken after English 20 and 30.

Continuing emphasis will be placed on developing writing skills in 20, 30, 40.

41. Creative Writing. (4) I, II, III.

Writing in forms chosen by the student, such as short story, poetry, one-act play, autobiography, and essay. May be repeated once for credit.

46A-46B-46C. Survey of English Literature. (4-4-4)

For minors and other non-majors. Not to be counted toward English major.

46A. I. Chaucer to 1660.

46B. II. Restoration and Eighteenth Century, including Milton.

46C. III. Nineteenth and Twentieth Centuries. (46B is not prerequisite to 46C.)

48. Modern Continental Literature. (4) I, II, III.

Reading, in translation, of selected modern authors such as Flaubert, Tolstoy, Dostoevsky, Proust, Valéry, Rilke, Kafka, Lorca.

Upper Division Courses

102A-102B-102C. Major British Writers.

(4-4-4)

For upper division minors and other non-majors. Not to be counted toward the English major.

102A. I. Chaucer through Milton.

102B. II. Dryden through Keats. (102A is not prerequisite to 102B.)

102C. III. Tennyson to the present. (102B is not prerequisite to 102C.)

103. Writing of Fiction. (4) I, II, III.

Prerequisite: Consent of instructor. May be repeated for credit up to 12 units.

104. Writing of Verse. (4) I, II, III.

Prerequisite: Consent of instructor. May be repeated for credit up to 12 units.

105. Creative Writing. (4) I, II, III.

All forms. Prerequisite: Consent of instructor. May be repeated for credit up to 12 units.

106G. Writing of Non-Fictional Prose. (4)

I, II, III.

Required of candidates for the Elementary and Secondary teaching credential in order to satisfy the State requirement of an upper division expository writing course. Under certain circumstances, students may be exempted from the course requirement by taking an examination. Other substitutes for this course must be approved by the English Department credential adviser. May not be counted toward the English major.

Non-Letters and Science Course

107. Practical Criticism. (4)

Prerequisites: 24 units in English; English major or minor.

A combined writing and criticism course for advanced students of literature and prospective English teachers; special attention given to teaching others to write.

Required for secondary credential candidates with English majors.

110. The Structure of Modern English.

(4) I, II, III.

Introduction to applied English linguistics. Sounds, forms, syntax, and vocabulary of contemporary Standard American English. Applications of linguistic theory to the teaching of composition and literature.

111. The History of the English Language.

(4) I, II, III.

The structure and vocabulary of English from its earliest recorded forms to the present.

113. Literary Theory and Criticism. (4) I, II, III.

Exploration of the critic's methods and objectives; study of selected major critical documents from Aristotle to the present.

115. Medieval Literature. (4) I, II, III.

The development of literary form and idiom in England through the 15th century (exclusive of *Troilus and Criseyde* and *Canterbury Tales*).

116. The English Bible as Literature.

(4) I, II, III.

117A. Shakespeare, Poems and Earlier Plays.

(4) I, II, III.

Major poems and plays of Shakespeare written, acted, or published during the period 1593-1602, including *Hamlet*.

117B. Shakespeare, Later Plays. (4) I, II, III.

Prerequisite: 117A.

Major works of Shakespeare from 1603-1613.

117C. Shakespeare, Advanced Studies.

(4) III.

Prerequisite: 117A-B.

Also offered for 3 units, with no prerequisite, as a field course in England in conjunction with Dramatic Arts 117. It may then be used towards satisfying the departmental requirement for majors.

117D. Shakespearean Renaissance Academy.

(8) (Summer Session only)

An intensive course in Shakespeare and the Renaissance hosted by the Institute of Renaissance Studies at Ashland, Oregon. Of the 8 units credit, 4 may be used to satisfy English 117A-117B.

117E. Shakespeare. (4) I, II, III.

For minors and other non-majors.

120. Modern Drama. (4) I, II, III.

European and American drama from Ibsen to the present.

124. Readings in the Modern Short Story.

(4) I, II, III.

125. Eighteenth-Century Fiction. (4) I, II, III.

Such writers as Defoe, Richardson, Fielding, Smollett, Sterne.

126. Nineteenth-Century Fiction. (4) I, II, III.

Such writers as Jane Austen, Emily Bronte, Dickens, Thackeray, Trollope, Hardy, George Eliot.

130. Survey of American Literature.

(4) I, II, III.

Such writers as Hawthorne, Emerson, Melville, Whitman, Henry James.

135. The Puritan Tradition in American Literature. (4)

The development of the main ideas of American Puritanism.

136. American Prose Until 1900. (4) I, II, III.

Such writers as Mather, Edwards, Emerson, Thoreau, Henry Adams.

137. American Verse Until 1900. (4) I, II, III.

Poets such as Taylor, Bryant, Whittier, Longfellow, Poe, Emerson, Whitman, Emily Dickinson.

138. American Fiction Until 1900. (4) I, II, III.

Such writers as Cooper, Hawthorne, Melville, Poe, Mark Twain, Henry James.

139. American Fiction Since 1900. (4) I, II, III.

Such writers as Faulkner, Hemingway, Norris, Dreiser, Crane.

142. Dante in English Translation. (4) I, II, III.

Reading of the *Divine Comedy*.

143. English Literature and Literary Genres. (4)

A course in a single genre such as tragedy, comedy, satire, allegory, epic. May be repeated with permission of department chairman.

146. Renaissance. (4) I, II, III.

A survey of the literature and social background of England between 1500 and 1660.

147. British Fiction Since 1900. (4) I, II, III.

Such writers as Conrad, Bennett, Joyce, Lawrence, Forster, Virginia Woolf.

148. The Flaubertian Tradition in Fiction. (4) I, II, III.

Ford Madox Ford, James Joyce, Samuel Beckett and others.

151. Junior-Senior Studies. (4) I, II, III.

Designed primarily for seniors whose major subject is English, but open to qualified upperclassmen in other majors. (151A-B, Modern Verse; 151B1, Blake; 151D, Donne and Jonson; 151DL, Descriptive Linguistics; 151Dr, Dryden; 151F, Faulkner; 151HE, Hemingway; 151J, Samuel Johnson; 151Ja, Henry James; 151L, Lawrence; 151P, Pope; 151PL, Politics in the English Novel; 151RF, Richardson and Fielding; 151S, Spenser; 151Sw, 151Sy, The Symbolist Movement; 151W, Wordsworth; 151Y, Yeats)

152A. Chaucer: Canterbury Tales. (4) I, II, III.**152B. Chaucer: Troilus and Criseyde and the Minor Poems. (4) I, II, III.****153. Yeats, Pound, Eliot. (4) I, II, III.****154A. British and American Verse Since 1900. (4) I, II, III.**

Hardy, Yeats, Bridges, and more recent poets writing in traditional forms.

154B. British and American Verse Since 1900. (4) I, II, III.

Pound, Eliot, Williams, and the more experimental writers of the period.

156. Medieval and Tudor Drama. (4)

English drama from its beginnings to the end of the Sixteenth Century, excluding Shakespeare.

157. Stuart Drama. (4)

English drama, excluding Shakespeare, from the end of the Sixteenth Century to the closing of the Theaters (1642).

158. Prose of the English Renaissance. (4) I, II, III.

Major prose writers of the 16th and 17th centuries.

159. Tudor Verse. (4) I, II, III.

Non-dramatic verse of such writers as Skelton, Wyatt, Spenser, Shakespeare, Marlowe, Donne, Jonson.

160. Stuart Verse. (4) I, II, III.

The song writers, the metaphysicals, the Cavaliers.

162. Milton. (4) I, II, III.**168. Restoration and Eighteenth-Century Prose. (4) I, II, III.**

Such writers as Dryden, Addison, Steele, Swift, Johnson.

169. Restoration and Eighteenth-Century Drama. (4) I, II, III.

Such dramatists as Dryden, Etherege, Wycherley, Congreve, Sheridan.

170. The Age of Satire. (4) I, II, III.

Donne, Rochester, Dryden, Swift, Pope, Johnson.

171. Restoration and Eighteenth-Century Verse. (4) I, II, III.

Such poets as Dryden, Pope, Johnson, Cowper, Burns, Blake, Crabbe.

178. Nineteenth-Century Prose. (4) I, II, III.

Romantic and Victorian writers, such as Coleridge, Hazlitt, Arnold, Carlyle.

179. Romantic Poetry. (4) I, II, III.

Such poets as Wordsworth, Coleridge, Byron, Shelley, Keats.

180. Victorian Poetry. (4) I, II, III.

Such poets as Tennyson, Browning, Arnold, Hopkins.

183. Poetry and Song. (3).

Prerequisite: Consent of instructor.

184. Studies in Modern European Literature. (4) I, II, III.

The mood of writers like Kafka and Camus is traced back by way of Proust to its beginnings in the nineteenth century, especially to its first statement in the writings of Dostoyevsky.

185A-B-C. Seminar in Modern European Literature. (4-4-4)

Prerequisite: Consent of instructor.

Close study of a major modern European author in translation. Subject will vary with instructor.

Three-quarter seminar; *all three quarters required*.

190. Ethnic Literature. (4)

Writings in English by natives of such countries as India and Ghana, and by American Negroes, Indians, and Mexican-Americans.

191. Literature and the Black American. (4)

The study of literary works dealing with American Negroes.

194. Group Studies for Advanced Students. (2-4)

Prerequisites: Upper division standing, consent of the instructor and the Department Chairman.

Designed to meet special curricular problems. May be repeated once for elective credit in the major.

Enrollment normally limited to 12 or fewer students.

197. Senior Seminar. (4)

Prerequisite: Senior standing.

An undergraduate seminar limited to senior English majors or juniors with consent of the instructor. Content will vary with each instructor. One quarter is required; may be repeated once for additional credit.

199. Independent Studies in English.

(1-5) I, II, III.

Reading and conference for seniors of high scholastic standing. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses**200. Methods of Literary Study.** (4) I, II, III.
(formerly 208)**201. Literary Criticism: Plato to Jonson.**

(3) I, II, III.

(formerly 217)

202. Literary Criticism: Dryden to the Present. (3) I, II, III.

201 is not prerequisite to 202.

203. Creative Writing. (4) I, II, III.

Prerequisite: Consent of instructor.

205A. Old English. (4) I, II, III.

Introduction to the language and prose.

205B. Old English. (4) I, II, III.

Shorter poems and Introduction to *Beowulf*.

205A prerequisite to 205B.

205C. Old English. (4) I, II, III.

Completion of *Beowulf*.

205A-B prerequisite to 205C.

206. The History of the English Language.

(4) I, II, III.

207. The Structure of the English Language.

(4) I, II, III.

Content of "Studies" courses and Seminars will vary from quarter to quarter, therefore these may be repeated for credit with the consent of the chairman of the departmental graduate committee.

230. Studies in Medieval Literature.

(4) I, II, III.

231. Studies in Renaissance Literature.

(4) I, II, III.

232. Studies in Restoration and Eighteenth-Century Literature. (4) I, II, III.**233. Studies in Nineteenth-Century Literature.** (4) I, II, III.**234. Studies in Twentieth-Century Literature.** (4) I, II, III.**235. Studies in American Literature.** (4) I, II, III.**236. Studies in Literary Criticism.** (4) I, II, III.**260. Seminar in Medieval Literature.** (4) I, II, III.**261. Seminar in Renaissance Literature.** (4) I, II, III.**262. Seminar in Restoration and Eighteenth-Century Literature.** (4) I, II, III.**263. Seminar in Nineteenth-Century Literature.** (4) I, II, III.**264. Seminar in Twentieth-Century Literature.** (4) I, II, III.**265. Seminar in American Literature.** (4) I, II, III.**270. Seminar in Poetry.** (4) I, II, III.**271. Seminar in Drama.** (4) I, II, III.**272. Seminar in Fiction.** (4) I, II, III.**273. Seminar in Literary Criticism.** (4) I, II, III.**297. Graduate Studies.** (1-4)

Graduate credit given for an upper division course with additional work at the graduate level.

596AA-596ZZ. Directed Reading and Research. (1-4)

Individual tutorial. A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division.

597. Individual Study for Master's Comprehensive and Ph.D. Examinations. (1-12)

Maximum of 12 units per quarter. Satisfactory/Unsatisfactory grade. Instructor should be the student's major professor or the chairman of his doctoral committee. No unit credit allowed toward advanced degree(s). Enrollment limited to 24 units per examination.

599AA–599ZZ. Dissertation Research and Preparation. (1–6)

Only for research underlying the dissertation; writing the dissertation.

Related Courses in Another Department

Education SE 390. Curriculum and Instructional Procedures and Materials Used in Teaching English in the Secondary School. (4)

Education SE 392. Student Teaching: English. (4)

Prerequisites: Education SE 390 and admission to student teaching.

Education SE 393. Problems Seminar in Teaching of English. (1) I, II, III.

Prerequisite: Education SE 390.

Education SE 394. Current Trends in the Teaching of English. (4)

Seminar, limited to experienced teachers of English, aiming to reassess the goals and methods for the teaching of English.

ENVIRONMENTAL STUDIES*Committee in Charge*

Preston Cloud, Ph.D., *Professor of Geology.*

John C. Crowell, Ph.D., Sc.D., *Professor of Geology (Co-chairman of the Committee).*

Robert Deacon, Ph.D., *Assistant Professor of Economics.*

Garrett Hardin, Ph.D., *Professor of Human Ecology.*

Richard Howmiller, Ph.D., *Assistant Professor of Biology.*

Richard M. Martin, Ph.D., *Associate Professor of Chemistry.*

Peter Mason, Ph.D., *Assistant Professor of Geography.*

Thomas P. Mitchell, Ph.D., *Professor of Engineering Mechanics.*

William W. Murdoch, Ph.D., *Associate Professor of Biology.*

*Roderick Nash, Ph.D., *Associate Professor of History (Co-chairman of the Committee).*



Arent H. Schuyler, Jr., M.A., *Lecturer in Environmental Studies. (Department Executive Officer.)*

J. Marc McGinnes, J.D., *Lecturer in Environmental Studies.*

Orrin G. Sage, Jr., M.A., *Lecturer in Environmental Studies.*

INTERDEPARTMENTAL MAJOR

Environmental Studies is an interdisciplinary, problem-oriented major offering direction to students interested in the total environment and its management. The major is designed to give the student a knowledge of the characteristics of the environment and the working approaches to the solution of environmental problems. Such knowledge is advantageous in the pursuit of careers ranging from teaching and government to law and business. The program is also preparation for work in the expanding fields of urban and regional planning, environmental impact analysis, natural resource management and conservation administration.

PREPARATION FOR THE MAJOR

Required: Environmental Studies 1, 2, 3, 4, 5, 6, and any introductory course in statistics. ENV S 1, 2 and 3 will normally be taken in the first year; and ENV S 4, 5, and 6 in the second. Other courses may be approved as substitutes upon application to the Committee.

THE MAJOR

Required: Environmental Studies 197A–B and 32 units from the following list: Anthropology 104 or 110 or 160 or 178; Art 165A; Biology 124 or 133 or 145A or B; Biology/Environmental Studies 123, 155; Botany 103A and B or 140; Chemistry/Environmental Studies 101; Economics 110 or 115 or 120; Environmental Studies 125, 135, 145, 165A and B,

¹ On leave Fall quarter 1973.

194 (4 units only), 199 (4 units only); Ergonomics 142 or 161; Geography 101 or 106 or 107 or 148 or 160 or 161 or 162; Geology 145; Geology/Environmental Studies 106; History 105 or 173C or T-173 or 174A or B or 176A or B or 177 or 178A or B; Mechanical Engineering 110 or 157 or 180. Political Science 154 or 175 or 177 or 190C; Psychology 130; Religious Studies 168; Sociology 107 or 123 or 126 or 127 or 132; Zoology 113A or B or 140. No more than one course may be taken from each group with the exception of Environmental Studies or Botany. Other courses may be approved as substitutes upon application to the Committee.

Also required is a concentration of 20 upper division units in a department of the College of Letters and Science, 10 units of which should be completed by the end of the junior year. Early choice of concentration, in consultation with the appropriate departmental representative, is essential. Upper division courses chosen for the major may also count toward the concentration. A second major is considered complete fulfillment of the concentration requirement.

Lower Division Courses

1. Introductory Physical Environment.

(5) III.

Mr. Schuyler

Lecture, four hours; discussion, one hour. A study of natural and human changes in the physical environment. Problems of land, air and water use are examined emphasizing the methods of chemistry, physics, meteorology, geology and geography.

2. Introductory Biological Environment.

(5) II.

Mr. Howmiller

Lecture, four hours; laboratory, two hours. General principles of ecology and their implications for analysis of current environmental problems such as population growth, food production, biocides, and pollution.

3. Introductory Social Environment. (5) I.

Mr. Deacon

Lecture, four hours; discussion, one hour. Instruction in the basic techniques of history, political science, economics, and their uses in understanding man's attitude toward and management of the environment.

4. Intermediate Social Environment.

(5) III.

Mr. Nash

Lecture, four hours, discussion, one hour. In a case study approach to an environmental problem, a wide variety of disciplines are all brought to bear on the oil operations in the Santa Barbara Channel. The blowout of 1969 receives special attention as a landmark in environmental philosophy and action.

5. Intermediate Physical Environment.

(5) II.

Mr. Schuyler

Lecture, four hours, discussion, one hour. A survey of man's present and future production and use of energy. The efficiencies of energy sources are studied using elementary thermodynamics. The environmental effects of energy production are examined and all possible alternatives are considered. Field trips are taken to power installations.

6. Intermediate Biological Environment.

(5) I.

Mr. Schuyler

Lecture, four hours, laboratory two hours. Population stress, control of disease, pesticide resistance, and the Green Revolution are studied. The different schools of environmental thinking are discussed

with the aim of helping the student form his own philosophy of the environment.

ENV S 25. Freshman Seminar in Environmental Studies. (4) I.

The Staff

Interdisciplinary investigation of an environmental problem and approaches to its solution. Open only to freshmen.

Upper Division Courses

106. Geological Problems of the Human

Environment. (4) III.

The Staff

Lecture, three hours; discussion, one hour. Prerequisite: ENV S 1 and 5 or Geol. 2 and 3 or the equivalent or consent of the instructor. Problems concerning earthquakes, mineral and energy resources, construction projects (dams, highways, tunnels, etc.), floods, beach erosion, etc. Principles of sound planning for the human use of the solid earth. This course is the same as Geology 106.

123. Cybernetic Processes in Human

Ecology. (5) II, III.

Mr. Hardin

Lecture, three hours; discussion, one hour. Prerequisite: Biology 1A or 20 or Botany 20 or ENV S 2 or consent of instructor. A study of controversial social problems and the relevance of biological facts and principles to their solution. Elements of cybernetics and systems analysis. Population growth and related pollution and conservation problems. Same as Biology 123.

125. Principles of Environmental Law. (4) I.

Mr. McGinness

Lecture, three hours. An introduction to the history and methodology of law as it relates to man's use of the environment.

135. Principles of Environmental Planning.

(4) II.

Mr. Mason

Lecture, three hours. An introduction to the history and theory of urban, regional, national, and international planning for responsible use of the environment. Field trips to local urban areas.

145. Field Methods in Environmental

Studies. (4) I, II, III. Mr. Nash and Staff

Seminar, three hours; field trips. Prerequisite: ENV S 1-3 or equivalent or consent of instructor. Detailed study of the characteristics and problems

of a particular environment such as the Sierra, Point Reyes, the Mojave Desert, the Grand Canyon, and the Los Angeles Basin. This course may be taken twice if the area study is different.

155. Conservation of Aquatic Resources.

(3) III.

The Staff

Lecture, two hours; discussion, one hour. Prerequisites: Environmental Studies 1, 2, 5 and 6 or introductory courses in Chemistry and Biology.

Biological, chemical and physical characteristics of lakes, streams, and estuaries, succession and dynamics of population in aquatic environments. Emphasis will be placed on man's interaction with aquatic systems; pollution, eutrophication, fisheries management. Same as Biology 155.

165A-B. Environmental Impact Analysis.

(4-4) II, III.

Mr. Sage

Lecture, three hours, ENV S 165A will analyze the environmental impact statement, now required by state and federal laws for both private and public projects that will have a significant effect on the environment. 10-15 representative statements will be reviewed. ENV S 165B will focus on one local project and compare statements on it.

ENV S T173. Wilderness and Man: History, Meaning and Management. (4) II.

Mr. Nash

The significance of wilderness in world history with an emphasis on man's relation to it both aesthetically and economically. The perspective will be international, although the American experience is the central concern. Special attention to the prob-

lems of preserving wilderness in modern civilization and to the future of wild country. Case studies and audio-visual techniques will be an important part of the course as will a wilderness field trip. This course is the same as History T173.

194. Group Study. (1-5) I, II, III. The Staff

Prerequisite: ENV S 1-3 and upper division status or consent of instructor. Directed group reading and study on specific subjects for Environmental Studies majors. Admission by special arrangement with the Environmental Studies Committee chairman. No more than 4 units may be counted toward the major.

197A-B. Senior Seminar in Environmental

Studies. (4-4) II, III. Mr. Schuyler

Seminar, 3 hours. Prerequisite: ENV S 1-6 and 18 required upper division units in the ENV S major or consent of instructor. An interdisciplinary, problem-oriented research seminar for seniors majoring in Environmental Studies. Preparation of an extensive paper, integrating knowledge acquired in the major will be required.

199. Independent Investigation in

Environmental Studies. (1-5) I, II, III.

The Staff

Directed research in the characteristics and problems of the environment. Open only to students majoring in Environmental Studies who are approved by the Committee chairmen. Courses are limited to no more than five units in one quarter and twelve units total. Students must have completed 125 units. No more than four units may be counted toward the major. Students may work as internes with local governmental agencies for 199 credit.

ERGONOMICS AND PHYSICAL EDUCATION

Rowand R. J. Chaffee, Ph.D., *Professor of Ergonomics and Physical Education.*

Steven M. Horvath, Ph.D., *Professor of Ergonomics and Physical Education.*

Evelyn M. Jones, Ph.D., *Professor of Ergonomics and Physical Education.*

Joseph E. Lantagne, Ed.D., *Professor of Ergonomics and Physical Education.*

Ernest D. Michael, Ph.D., *Professor of Ergonomics and Physical Education (Chairman of the Department).*

Rene H. Rochelle, Ph.D., *Professor of Ergonomics and Physical Education.*

Elvera Skubic, Ph.D., *Professor of Ergonomics and Physical Education.*

Marilyn Flint, Ph.D., *Associate Professor of Ergonomics and Physical Education.*

Samuel Jacobs, Ph.D., *Assistant Professor of Ergonomics and Physical Education.*

Charles M. Overbey, Ph.D., *Acting Assistant Professor of Ergonomics and Human Factors.*

Eula D. Turner, M.A., *Lecturer in Ergonomics and Physical Education.*

Marian H. Anderson, M.S., *Professor of Ergonomics and Physical Education, Emeritus.*

Theodore Harder, Ed.D., *Professor of Ergonomics and Physical Education, Emeritus.*

Jean Hodgkins, Ed.D., *Professor of Ergonomics and Physical Education, Emeritus.*

Gladys R. Van Fossen, M.A., *Professor of Ergonomics and Physical Education, Emeritus.*

Ergonomics is the study of human performance and adaptability. It concerns itself with the psychological, kinesiological, physiological, and sociological principles underlying the effective use of human energy. In order to permit flexibility in preparing students for various professional goals, three majors are offered: Health Studies, Human Factors and Physical Education.

HEALTH STUDIES MAJOR

This major is designed to provide undergraduate preparation leading to such careers as physical therapy, occupational therapy, public health, community health and health instruction. There are two tracks open to students interested in Health Studies:

I. Pre-Physical Therapy Emphasis

Preparation for the Major: Biology 1AB; Zoology 25 and 40; Chemistry 1AB; Physics 6AB (all previous courses with labs); Psychology 1; ERGPE 30; Sociology 1 or 101 and 3 units of physical activities as prescribed by the department.

THE MAJOR

Required Courses

Biology 130A or 127 or Zoology 107 (with lab); ERGPE 101, 103, 104 105, 110, 118, 197B; Health 101 and Psychology 103. *Electives:* Six units selected from the following: ERGPE 102, 106, 142, 156, 170, 194, 199 and Growth and Development.

II. General Health Emphasis

Preparation for the Major: Biology 1A and 1AL; Zoology 25 and 25L; Zoology 40 and 40L; Chemistry 1A and 1AL; Chemistry 1B and 1BL; Organic Chemistry 8A; Organic Chemistry 8B; Mathematics 30A; Physics 6A and 6AL; Physics 6B and 6BL; Psychology 1; ERGPE 30; Health 42; Anthropology 5.

THE MAJOR

Required Courses

Biology 130A; Psychology 113A; Health 101, 108; ERGPE 105, 110, 156. *Electives:* Twelve units selected from the following: ERGPE 118, 122, 158, 170; Health 152. Eight units from the following: Zoology 109; Biology 100, 104A, 104L, 107L, 108A, 108B, 108L; Chemistry 101; Anthropology 101, 102, 102H, 120A; Sociology 101; Psychology 102, 108.

HUMAN FACTORS MAJOR

Human Factors is an interdisciplinary science which draws upon the traditional disciplines of psychology, physiology and engineering. The major is designed to give the student a knowledge of human characteristics and limitations in relation to the jobs, environments, and technology of modern society. The essence of Human Factors is a man-centered approach to research, application and problem-solving and the major prepares the student to use information about man in the design of man-machine systems, work methods and environments so that man can live and work safely, comfortably and effectively. The program provides a basic preparation for careers in industry or government and a solid foundation for graduate work in Ergonomics or Human Factors.

Preparation for the Major: Biology 1A and 1AL; Zoology 25 and 25L; Zoology 40 and 40L; Chemistry 1A and 1AL; Chemistry 1B and 1BL; Electrical Engineering 5; Mathematics 3A, Mathematics 3B or 30A; Physics 6A and 6AL; Physics 6B and 6BL; Physics 6C and 6CL (or equivalent physics series); Psychology 1, 3; and ERGPE 30.

THE MAJOR

Required Courses

ERGPE 101, 105, 110, 118, 122, 161 and 170. *Electives:* Twelve units selected from the following: ERGPE 102, 106, 156, 158, 160, 197A, Health 101, 105, 106. Nine units from any of the following areas: Biology, Psychology, Engineering, Mathematics, Chemistry and Physics.

PHYSICAL EDUCATION MAJOR

The curriculum in Physical Education provides the fundamental body of knowledge of the science and art of human movement. This academic major serves as an appropriate

discipline underlying work toward a teaching credential or advanced graduate degrees. The major is designed primarily for students who may wish to pursue careers in such fields as teaching on the elementary, secondary or college levels, coaching in the public schools, working in recreation organizations and teaching children with perceptual-motor problems.

Preparation for the Major: Chemistry 1A and 1AL; Physics 6A and 6AL; Zoology 25, 40; (with Labs); Psychology 1 or 101; Sociology 1; Biology 20 or 1A; ERGPE 20, 30; Growth and Development; and 6 units of physical activity courses as designated by the department.

THE MAJOR

Required Courses

ERGPE 101, 105, 110, 118, 130; Health 101. *Electives:* Sixteen units in upper division courses in ERGPE with no more than six units in the 190 series.

THE DEGREE OF MASTER OF ARTS

Requirements for the M.A.—(see general University and Departmental requirements).

Students will follow one of the following two plans:

Plan I: Thesis Plan—A minimum of 30 quarter units and a thesis are required. The units may be taken in graduate or upper division courses, and at least 15 will normally be in the 200 series in the major subject. Courses outside the major may be taken upon approval by the student's advisory committee. No unit credit is allowed for the thesis. No more than 12 units may be taken in the 500 series.

Plan II: Comprehensive Examination Plan—A minimum of 36 units of upper division and graduate courses is required, of which at least 18 units will normally be in the 200 series in the major subject. Courses outside the major may be substituted upon approval by the student's advisory committee. Satisfactory performance in a comprehensive examination and 4 units of 596 course work are required.

TEACHING CREDENTIALS

Either a major or a minor in Ergonomics and Physical Education may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Ergonomics and Physical Education and the Graduate School of Education.

ERGONOMICS AND PHYSICAL EDUCATION

Lower Division Courses

10. **Science of Nutrition.** (3) Miss Jones
Lecture, 3 hours.
Science of human nutrition with emphasis on food supplies and food selection.

20. **Concepts of Physical Education.** (3) I, II. The Staff
An interpretation of the field designed to give the prospective major student an understanding of its scope.

30. **Basic Statistics.** (3) I, II. Mr. Rochelle
Lecture, 3 hours.
Measures of central tendency, dispersion, and correlation. Inferential statistics, hypotheses testing, the significance of differences. Introduction to non-parametrics. Interpretation of statistical methods in

the physiological and psychological areas of performance.

30L. Measurement and Evaluation

- Laboratory.** (1) I, II. Mr. Rochelle
Laboratory, three hours. Prerequisite: concurrent registration in ERGPE 30.
Measurement of neuromuscular skills and structural traits designed to indicate performance and achievement, application of the scientific criteria and item analysis.

Upper Division Courses

101. **Analysis of Movement.** (4) I, II. Miss Flint
Lecture, 3 hours; laboratory, 3 hours.
Prerequisites: Zoology 25 and Physics 1, 6A or 10 and ERGPE 30.
Basic concepts of human movement, physical and biological principles involved, and their application to fundamental movement patterns and athletic skills.

102. Advanced Analysis of Movement. (4) III. The Staff

Lecture, 3 hours; laboratory, 3 hours.
Prerequisite: ERGPE 101.

Analysis and evaluation of contemporary research in biomechanics, skill performance and related topics.

103. Kinesiotherapy. (4) I, II. Miss Flint

Lecture, 3 hours; laboratory, 3 hours.
Prerequisite: ERGPE 101.

Pathology of handicapping conditions, variations of human structure and the role of exercise in the development and improvement of movement for the physically handicapped. Principles required for posture control and basic movement patterns. An evaluation of selected exercises.

104. Advanced Kinesiotherapy. (4) III.

Miss Flint

Lecture, 3 hours; laboratory, 3 hours.
Prerequisites: ERGPE 101 and ERGPE 103.

Therapeutic exercise, rehabilitative techniques and developmental activities for the physically limited person. A thorough investigation of certain debilitating conditions including case histories. Visits to specialized clinics and rehabilitation centers.

105. Physiology of Exercise. (4) II, III.

Mr. Michael

Lecture, 3 hours; laboratory, 3 hours.
Prerequisite: Zoology 40.

Response of organs and systems to exercise; the response of ventilation, heart rate, and peripheral blood flow to exercise, metabolism and exercise, oxygen uptake and oxygen debt parameters.

106. Advanced Physiology of Exercise.

(4) I. Mr. Michael

Lecture, 3 hours; laboratory, 3 hours.
Prerequisite: ERGPE 105 or consent of instructor.
Sources of energy for exercise; diet and body composition; energy balance; respiratory and metabolic changes with exercise.

110. Neuromuscular Physiology. (4) II.

Mr. Chaffee

Lecture, 3 hours; Laboratory, 3 hours.
Prerequisites: Chemistry 1A; Biology 1A; and Zoology 40.

Biochemical and cellular-physiological aspects of muscle and nerve cell function; and the function of the central and autonomic nervous system and other selected organ systems associated with motor performance.

118. Perceptual Motor Learning. (4) I, III.

Miss Skubic

Lecture, 3 hours; laboratory, 3 hours.
Prerequisites: ERGPE 110, Psychology 1 or 101 and ERGPE 30.

Sensory, cognitive and motor processes involved in motor learning; perceptual motor dysfunction; environmental and instructional factors influencing the learning situation.

122. Statistical Procedures and Experimental Design. (3) III.

Mr. Overbey

Lecture, 2 hours; laboratory, 2 hours.
Prerequisite: ERGPE 30.

Review of basic statistics, analysis of variance, probability theory, factorial designs, and distribu-

tion-free statistics. Introduction to computer programming.

130. The Cultural Bases of Physical Education. (4) I, II.

The Staff

Lecture, 4 hours.

Prerequisite: ERGPE 20.

The philosophical and sociological foundations of Physical Education. An examination of principles of natural and behavioral science as determinants of current beliefs and practices. Social variables which affect and are affected by individuals and groups as they engage in movement.

142. Leisure and Society. (4) I, II, III.

The Staff

Lecture, 3 hours; discussion, 1 hour.

Prerequisite: Sociology 1 or 101.

A study of the role of leisure in society. Causal factors of the increase in leisure in the United States; implications of automation. Urgency of the need for widespread recognition of the potential problems involved.

156. Cardiorespiratory Physiology of

Performance. (4) III.

Mr. Rochelle

Lecture, 3 hours; laboratory, 3 hours.

Prerequisites: ERGPE 105 and 110 or consent of instructor.

Function and regulation of the circulation, heart, vascular bed, dynamics of the circulation, reflexes.

158. Physiological Adjustment to Work and Environmental Stress. (4) III.

The Staff

Lecture, 4 hours.

Prerequisites: ERGPE 105, 110.

Interrelations of the reactions and adjustments made by the working man to the usual stressful states to include temperature and humidity alterations, altitude and underwater living and also to the newer environmental stressors, such as air pollution, and urban living.

160. Perceptual Motor Performance. (4) II.

Miss Skubic

Lecture, 3 hours; laboratory, 3 hours.

Prerequisite: ERGPE 118 or consent of instructor.

Individual variables involved in highly skilled performance such as personality, physique, intelligence, emotion, pain tolerance and motivation; psycho-social influences in sport psychology.

161. Ergonomic Principles of Human

Performance. (4) III.

Mr. Overbey

Prerequisite: Consent of instructor.

An interdisciplinary approach to analysis of information processing and complex psychomotor tasks. Emphasis on the influence of environmental, physiological, psychological, and social variables upon the capabilities and limitations of human performance in individual situations, personnel sub-systems, and modern man-machine systems.

170. Introduction to Human Factors. (4) III.

Mr. Overbey

Lecture, 4 hours.

Prerequisite: Consent of instructor.

Experimental psychology applied to the study of sociotechnical problems in modern society. Consideration of psychological and physiological factors in design and evaluation of contemporary environ-

mental and man-machine systems. Emphasis upon cybernetic model of man's role as decision-maker within complex systems.

180. Seminar: Leisure and the Child.

(3) I, II, III.

The Staff

Lecture, 2 hours; laboratory, 4 hours.

Prerequisite: Consent of instructor.

Theories of play, motivation and creativity. Application of principles of human movement. Laboratory experience in the elementary schools.

194. Individual and Group Studies.

(1-4) I, II, III.

The Staff

Prerequisite: Consent of instructor.

A critical review of research in selected areas.

Enrollment normally limited to 12 or fewer students.

197A. Senior Seminar. (3) I, II, III. The Staff

Prerequisite: Qualified senior students and consent of instructor.

A study of the current literature of the field.

197B. Senior Seminar—Prephysical

Therapy. (3) III.

Miss Flint

Lecture, 3 hours.

Prerequisites: ERGPE 103 and 104 (or concurrently).

Advanced readings and discussion dealing with various problems related to physical medicine, rehabilitation or corrective physical education.

199. Independent Studies in Physical

Education. (1-5) I, II, III.

The Staff

Prerequisite: Only students in senior standing.

Study of special problems in physical education or recreation. 199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses

203. Biomechanics. (4) I.

Miss Flint

Lecture, 4 hours.

Prerequisites: ERGPE 101 and 102 or equivalent. Kinematics and kinetics of human motion. Analysis of fundamental movement patterns. Factors affecting normal performance. Critical analysis of current research in biomechanics, biomedical engineering, ergonomics and the life sciences. Projects utilizing cinematography, electromyography, and biomechanical techniques.

204. Mechanisms of Motor Response. (4) III.

The Staff

Prerequisite: ERGPE 118 or consent of the instructor.

A specialized seminar on response organization, storage and retrieval mechanisms, closed-loop theory and cybernetics as they relate to human performance.

206. Seminar in Work Physiology. (4) III.

Mr. Michael

Prerequisite: Consent of the instructor.

Physical growth and development of skeletal and muscular systems. Effects of exercise on adaptation to stress. Metabolic costs of work and energy balance. Training and fatigue, evaluation of work capacity.

207. Environmental Physiology. (4) III.

The Staff

Prerequisite: Consent of instructor.

The physical, chemical, and biotic influences of the environment on man, and the adaptive changes in response to environment.

210. Biomedical Aspects of Ergonomics.

(4) II.

Mr. Chaffee

Lecture, 4 hours.

Prerequisite: ERGPE 105 and 110.

Many of the changes occurring in man's tissues and physiological chemistry during exercise and work performance can be detected in studies on changes in body fluids. These changes will be the major subject material of this course.

218. Physiology of Aging. (4) II. Mr. Horvath

Prerequisite: Consent of instructor.

Physiological alterations occurring consequent to the aging processes. A study of the changes which occur in the human organism from the moment of birth, through the developmental years to maturity and to biological senescence, with sociological and psychological correlates.

231. Organization, Administration and Curriculum of Physical Education. (4) I.

The Staff

Prerequisite: ERGPE 130.

Organization, administration and curriculum of Physical Education in the American schools. Analysis and observation of secondary programs.

235. Design and Statistical Analysis. (4) III.

Mr. Overbey

Lecture, 3 hours; laboratory, 3 hours.

Prerequisite: ERGPE 30 or consent of instructor.

Application of statistical methods to research in the physiology and psychology of human performance. Includes analysis of variance, latin square design, regression and distribution free statistics.

250. Philosophies of Ergonomics. (4) III.

The Staff

Prerequisite: ERGPE 130.

An examination of philosophical thinking in the field, the early historical thought that influenced current beliefs, and implications for the future. The formulation of a professional philosophy by the student.

252. Critical Issues in Health, Physical Education and Recreation. (4) II.

The Staff

Current problems, trends, and research in health, physical education, and recreation; their scope and implications.

259. Seminar in Human Factors Research.

(4) II.

Mr. Overbey

Prerequisite: Consent of the instructor.

An examination of instrumentation, analysis and interpretation of current human factors research.

260. Seminar in Contemporary Research.

(1) III.

Mr. Jacobs

Presentation and exchange of ideas by faculty and students of current research.

276. Fundamentals of Research. (4) I.

Mr. Chaffee

Prerequisite: ERGPE 30.

A review of the research literature in ergonomics; an analysis of research methods used.

280. Motor Learning and Performance.

(4) II.

Miss Skubic

Prerequisite: ERGPE 118, or consent of instructor.

A critical examination of research in the area of motor learning. Environmental, physiological and psychological factors influencing the learning and performance of motor skills; perceptual-motor dysfunction.

594A-B-C-D. Special Topics. (1-4) I, II, III.

The Staff

596A-B-C-D. Directed Reading and

Research. (1-6) I, II, III.

The Staff

Related Courses in Another Department**Education P 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Physical Education.**

(3) I, II, III.

The Staff

Prerequisite: Major or minor in physical education.

Procedures, materials, methods and techniques of teaching physical education. Program planning and organization of physical education and athletic programs at the secondary level with observation in the elementary and secondary schools.

Education P 392. Student Teaching: Physical Education. (1-6) I, II, III.

The Staff

Prerequisite: Major or minor in physical education; Education P 390.

Teaching practice and class management under the supervision of master teachers and University supervisors.

Education P 393A-B. Seminar in Student Teaching: Physical Education.

(1-1) I, II, III.

The Staff

To be taken concurrently with Education P 392.

HEALTH**Lower Division Course****42. Introduction to Pharmacology. (4) II.**

Mr. Jacobs

Lecture, 4 hours.

Prerequisite: Consent of instructor.

A course designed to acquaint students with the field of pharmacology and basic mechanisms of drug action. Topics will include drug dosages, metabolism and distribution; drugs used in anesthesia, the major disease states, psychopharmacological agents, 'street' drugs, and drug abuse.

Upper Division Courses**100. History and Science of Health and Disease. (4) II.**

The Staff

History of health and preventive medicine. Modern contributions to health from the sciences.

101. Health in the Twentieth Century.

(4) II.

Mr. Jacobs

Prerequisite: Consent of instructor.

An analysis of the causes of morbidity and mortality in the United States. Special consideration of the interactions of the behavioral sciences, medicine and education to the improvement of health.

105. Public Safety and Accident Prevention.

(3) I.

The Staff

An analysis of causes of types of accidents and research supporting their prevention. Emphasis to be placed on the interaction among physiological, psychological, and sociological factors relating to accidents.

106. Occupational and Industrial Health.

(3) I.

The Staff

A survey of recent research and analysis of the factors affecting the health, efficiency, and welfare of workers. Includes specific diseases and disabilities with their contributory conditions, the administration of industrial health programs, and legal aspects of employee health and safety.

107. Community Health Agencies. (3) II.

Mr. Lantagne

An analysis of community agencies supported by public and private funds which are concerned with the health and welfare of the population of the United States.

108. Marriage and Parenthood. (4) I, II, III.

Mr. Lantagne

Tenets underlying successful marriage, emphasizing physiological and emotional factors.

152. Introduction to Toxicology. (4) I.

Mr. Jacobs

Lecture, 4 hours.

Prerequisites: Health 42, Biology 1A, Chemistry 8A and 8B or consent of instructor.

A study of various toxicological agents and their effects on normal physiological functions. Topics to be discussed will include: principles of drug action, biological factors influencing toxicity, antidotal therapy, industrial and environmental hazards, medicinal, drugs of abuse, and household toxins.

199. Independent Studies in Health

Science. (1-5) I, II, III.

The Staff

Open only to advanced students approved by the department chairman and faculty members involved. 199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

FILM STUDIES**Advisory Committee:**Henri Dorra, Ph.D., *Professor of Art.*Richard C. Exner, Ph.D., *Professor of German.*Noel Fleming, D.Phil.Oxon., *Professor of Philosophy.*

William Frost, Ph.D., *Professor of English*.
 Stanley Glenn, Ph.D., *Professor of Drama*.
 Edward Loomis, Ph.D., *Professor of English*.
 Jorge de Sena, Ph.D., *Professor of Portuguese*.
 Alexander Sesonske, Ph.D., *Professor of Philosophy*.
 Ursula Mahlendorf, Ph.D., *Associate Professor of German*.
 Carroll W. Pursell, Ph.D., *Associate Professor of History*.
 Michael J. Dvortcsak, M.F.A., *Assistant Professor of Art*.
 Naomi Greene, Ph.D., *Assistant Professor of French*.
 Patrizio Rossi, Ph.D., *Assistant Professor of Italian (Chairman, Film Studies Program)*.
 Albert Wachtel, Ph.D. *Assistant Professor of English*.
 Harry Lawton, B.Litt., *Lecturer in Italian*.

The Film Studies Major is an interdisciplinary major dedicated to the study of film as a humanistic discipline. Through courses in various fields of study, the Film Studies Major aims at providing a solid basis for critical evaluation of this medium which is becoming more and more a part of our lives and of the relationships between film, social conditions, and between film and the more traditional academic disciplines. Thus, the emphasis of Film Studies at UCSB is *critical* rather than *technical*.

The purpose of the Film Studies Program is to unite the various courses in film given at intervals in various departments and to permit the organization of the study of film on a central but flexible basis.

REQUIREMENTS FOR THE FILM STUDY GROUP

Requirements for the major are flexible, and can be structured to meet the student's interests. In consultation with a faculty advisor, the student may work out an individual program centered around his special interest and goals. Students are advised to call on the Chairman or members of the Advisory Committee to discuss the program or courses.

PREPARATION FOR THE MAJOR

REQUIRED

Dramatic Art 46
 Dramatic Art 60
 History 4ABC, or two Upper Division Courses in European History.
 One of the following:
 Music 15
 Art 1
 Art 160B
 Art 160C
 Dramatic Art 160E

STRONGLY RECOMMENDED

English 120
 Philosophy 136
 History 173-S

THE MAJOR IN FILM STUDIES

REQUIREMENTS FOR THE MAJOR

40 Upper Division Units, as follows:

Dramatic Art 146
 12 Upper Division Units of Foreign Literature (may be in translation)
 24 units from the following:
 Colloquium 126, 130, 132, 133
 French 178X, 184X, 186, 187, 188X, 189X, 199

Italian 142X, 180XYZ, 188XY, 189X, 199

Russian 125

Scandinavian 139B

and new courses approved by the department by petition.

COURSES

In addition to courses in film already offered (see Requirements for the Major), new courses are planned in Black film, Scandinavian film, and English and American film. A survey course in World Cinema (3 quarters) is also being planned under the sponsorship of the Film Studies Program.

The Film Studies Program does not offer a fixed curriculum. Courses in film are offered at the discretion of the various departments, and because of the new and experimental nature of the field, are often subject to change and innovation; the curriculum is often supplemented by the addition of new courses. For this reason, a list of film courses with descriptions of the classes and a schedule of films to be shown will be posted outside the Film Studies office before the beginning of each new quarter, as close to the opening of pre-enrollment as possible. Students are urged to consult this list before pre-enrolling.

FRENCH AND ITALIAN

William F. Aggeler, Ph.D., *Professor of French, Emeritus.*

Anne G. Cushing, Ph.D., *Professor of French.*

Geneviève Delattre, Ph.D., *Professor of French.*

André Malécot, Ph.D., *Professor of French.*

Edmond E. Masson, Ph.D., *Professor of French.*

Mark J. Temmer, Ph.D., *Professor of French.*

Ronald W. Tobin, Ph.D., *Professor of French.*

Philip D. Walker, Ph.D., *Professor of French (Chairman of the Department).*

Robert Beachboard, Docteur de l'Université de Paris, *Associate Professor of French.*

Alfredo A. Bonadeo, Ph.D., *Associate Professor of Italian.*

Jack Murray, Ph.D., *Associate Professor of French.*

Ernest Sturm, Ph.D., *Associate Professor of French.*

William J. Ashby, Ph.D., *Assistant Professor of French.*

Naomi Greene, Ph.D., *Assistant Professor of French.*

Donald L. Maddox, Ph.D., *Assistant Professor of French.*

Jacques Malet, Ph.D., *Assistant Professor of French.*

Patrizio Rossi, Ph.D., *Assistant Professor of Italian.*

Ivan Sonier, Ph.D., *Assistant Professor of French.*

Robert Rorke, M.A., *Lecturer in French (Supervisor of Teaching Assistants).*

Jacqueline Simons, Diplôme d'Etudes Supérieures, *Lecturer in French (Supervisor of Teaching Assistants).*

Vincenzo De Nardo, M.A., *Lecturer in Italian.*

Harry Lawton, M.A., B.Litt.(Oxon), *Lecturer in Italian.*

The major in French or Italian is primarily a liberal arts major. It is not restricted to prospective teachers or to those preparing themselves for careers in government or business. It is designed above all for young men and women who wish to receive a solid training in a humanistic discipline, enriching themselves through the study of a great foreign culture and contributing in the process to American civilization and the growth of international understanding.

The Department of French and Italian makes available to all students courses in French and Italian literature, including courses in English translation. These may be taken as electives or in satisfaction of the General Humanities requirement. Authors and movements

whose contribution to world culture has been most considerable are stressed—e.g., Dante, Baudelaire, Surrealism, or Existentialism. The Department also provides courses on the French and Italian film and on other French and Italian cultural institutions; provides instruction in the French and Italian languages; offers a major leading to the Bachelor of Arts degree in French or Italian; offers graduate programs leading to the M.A. and Ph.D. degrees in French literature or a combination of French literature and linguistics; and collaborates with other departments in the Comparative Literature undergraduate major program, the Film Studies program, and the Medieval Studies program.

LANGUAGE PROGRAM

The study of foreign languages has traditionally been considered an essential part of a truly superior education.

To assist students in their attempt to achieve their linguistic objectives, the Department offers a variety of courses: individualized instruction, a reading track, a “four-skill” track, conversation, etc.

Students enrolled in individualized instruction (French 14 or Italian 14) proceed at their own pace. Whenever they have demonstrated a satisfactory performance in any one segment, they may go on to the next higher segment.

Students enrolled in language courses 1 through 6 who have received a D in one of these courses are strongly advised not to continue to the next higher course. Students who have received an F or a NP in one of these courses may not continue to the next higher course until they have repeated and passed the course failed or otherwise demonstrated the proficiency required for admission to the next higher level.

The Department reserves the right to place students in courses from which they can best profit. Students who have completed a more advanced course in a sequential series (e.g. French or Italian 1, 2, 3, 4, 5, 6) will not be permitted to take a course that is lower in the series. Students will not be permitted to take two courses of a sequential series concurrently. Students must complete French 26 and French 30 *prior* to taking upper division courses. Students who have completed an upper division course will not be permitted to take a lower division course in the department, with the exception of French 18A–B. Students who possess a native command of a foreign language will not be permitted to enroll in lower division courses pertaining to that language.

THE MAJOR IN FRENCH

PREPARATION FOR THE MAJOR

Course 14, or 1, 2, 3, 4, 5, 6 and French 26, 30.

French 27, History 4A–B–C and Philosophy 20A–B–C are strongly recommended.

Students who wish to make French their major subject must have maintained at least an average grade of C in the college courses in French taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Requirements for the Major

Forty upper division units in French are required. Of these, twelve units must come from French 109A–B–C, *Introduction to French Literature*, or its equivalent (an “equivalent” course is any literature course that covers approximately the same material as any one quarter of French 109 and is not in translation); twelve units must come from literature courses taught in French; and sixteen units must come from all other 100 series courses (e.g., French literature, film, language, culture). Of these sixteen units, a maximum of eight units may be from French courses taught in English (e.g., French 164X, Rousseau and the Confessional Urge, or French 178X, French Film: Theory and Practice).

Majors who go to France under the Education Abroad Program should complete at least twelve units of upper division courses in the department on the Santa Barbara campus, either before or after their year abroad.

THE MAJOR IN ITALIAN

PREPARATION FOR THE MAJOR

Course 14 or 1, 2, 3, 4, 5, 6. History 4A–B–C and Philosophy 20A–B–C are strongly recommended.

Requirements for the Major

Forty upper division units in Italian are required. Of these nine units must come from Italian 101A–B–C, and thirty-one units from all other courses in the 100 series.

TEACHING CREDENTIALS

A major or a minor in French or in Italian may serve as an appropriate part of the program of studies required for an elementary or secondary teaching credential in California.

The Teaching Major in French should, in so far as possible, include French 103A–B–C, Phonetics; French 182A–B, Contemporary Institutions; French 104A–B, Introduction to Stylistics, among the forty upper division units required for the major as specified above. French conversation courses are highly recommended for teaching majors.

The Teaching Major in Italian does not differ from the regular major.

The Teaching Minor in French or in Italian requires a minimum of thirty units in the respective discipline; of these eighteen units must be in the upper division. The courses recommended for the teaching major in French are also highly recommended for the minor.

For further information concerning teaching majors or minors, the student must confer with the designated counselor in the Graduate School of Education, as well as with his adviser in French or in Italian.

FRENCH

THE DEGREE OF MASTER OF ARTS

Requirements

1. In addition to fulfilling the general requirements for admission to graduate status, the students must have an undergraduate major in French or its equivalent. Candidates who are deficient in this respect will take the necessary undergraduate courses to make up the deficiency before beginning work in the master's program.

2. The French Department offers the M.A. degree under Plan I (thesis) and Plan II (without thesis).

a. Under Plan I, the student is expected to take 36 units of work; 30 units must be course work and 6 units must be thesis work. Of the 30 units of course work, 18 units must be in graduate courses (i.e., "200" and "500" courses).

b. Under Plan II, the student is expected to take 36 units of course work, 24 of which must be in graduate courses (i.e., "200" and "500" courses).

c. The student must satisfy the following requirements: demonstrate a knowledge of French phonetics equivalent to French 103ABC (by evidence of transcript, by taking course 103, or by special departmental examination); a knowledge of Old French Philology equivalent to French 202AB (by evidence of transcript, by taking course 202, or by special departmental examination); and a reading knowledge of one additional relevant foreign language. It is recommended that students have a background in Latin equivalent to a year course in college prior to taking French 202.

d. Courses in other departments (English, foreign language, history, philosophy, art history, music, etc.) may, with the approval of the Graduate Adviser, be counted toward the degree if they have relevance to the student's special program.

- e. All students must pass a comprehensive examination.

Plan I students must pass an oral exam consisting of a defense of the master's thesis. Plan II students must pass an oral exam consisting of an *explication de texte* in French. In preparing himself for the comprehensive examination, a candidate may follow one of two plans:

Plan A, designed for those who are primarily interested in literature. The comprehensive will consist of: a) a series of short question exams on the six main periods of French literature, to be answered in French; b) two formal essays on periods chosen by the student, at least one essay to be written in French.

Plan B, designed for those who are primarily interested in linguistics. The comprehensive exam will consist of: a) a series of short question exams on at least three periods of French literature and on up to three areas of linguistics (descriptive phonetics, general linguistics, applied linguistics, philology, etc.), to be answered in French; b) two formal essays, at least one essay to be written in French.

- f. All students must demonstrate a proficiency in speaking and writing French.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. See preceding section on admission to graduate status and on general requirements concerning residence, course load requirements, foreign languages, the oral qualifying examination, and the dissertation and its defense.

2. Departmental requirements:

a. Completion of an M.A. degree in French from UCSB or a degree based on equivalent training. (See preceding section on requirements for the M.A. degree.) Students having a degree from another institution must take a placement examination during the first quarter of residence. After the completion of the M.A., the student will take those courses recommended by his advisers as useful in preparing himself for the comprehensive examination. (Note, however, that students holding teaching assistantships will be expected to enroll in a minimum of two graduate courses each quarter.)

b. A student must also satisfy the requirement of a reading knowledge of two relevant foreign languages.

c. All students must pass a series of written comprehensive examinations. In preparing himself for these examinations, a candidate may follow one of two plans:

Plan A, designed for those who are primarily interested in literature. The student would take six examinations on the main periods of French literature. Formal essays, upon recommendation of the student's guidance committee, may be substituted for up to three of the examinations.

Plan B, designed for those who are interested in linguistics, philology, or phonetics. A specialist in linguistics would take examinations in at least three areas of linguistics and in up to three centuries of French literature. A specialist in philology would be examined in Old French Philology, the history of at least one language other than French, linguistics, and up to three centuries of French literature. A specialist in phonetics would take examinations in general linguistics, French phonology, phonetics (physiological and acoustics), and at least two centuries of French literature. With special approval of the student's guidance committee, a student in Plan B may make certain specified substitutions of essays for examinations.

d. After the student has successfully passed all of the written comprehensives, he must pass a qualifying oral examination in order to be advanced to candidacy.

e. Following his formal advancement to candidacy, the student must present a dissertation which gives evidence of ability to conduct independent research of high quality. Upon its acceptance, the candidate will defend it in an oral examination.

f. Ordinarily, a candidate is required to serve as a Teaching Assistant for a minimum of three quarters.

Check with the department for the latest schedule information and course prerequisites before registration.

FRENCH

Lower Division Courses

Please note: It is highly recommended that students take the French Placement Examination administered by the Department to determine the level of French they should take in the Department's language program.

Students wishing to begin the study of French may now choose between *French 1-6* and *French 14 (Individualized Instruction 1-6)*. To help them decide which they may prefer, the main characteristics of each course are listed below:

French 1-6

All students progress at the same rate of speed and cover the same amount of material.

At the end of the quarter all students who pass receive 4 units of credit.

Mastery of each instructional unit is encouraged but not required before the student proceeds to the next. As a result: the final grades for the quarter will be in the traditional range of A through F.

Class and laboratory attendance are required.

The instructor is primarily responsible for directing student learning.

Tests are given to all students during regular classes at fixed times.

To sum up, French 1-6 is best for those students who prefer to stay with a group, with maximum guidance from an instructor, while French 14 is for those who wish to assume more responsibility for their own learning. French 14 is also for those who prefer to advance at a pace other than that imposed in French 1-6 or—to put it another way—who wish to earn either fewer or more than 4 units of credit per quarter (each student will wish to adjust his remaining course load according to the approximated number of units he plans to earn in French 14).

French 14R, the reading track, is designed for students who are interested in the acquisition of reading skills. It will cover the second year of French beginning at the level of the fourth quarter.

1. Elementary French. (4) I, II. The Staff

The beginning course in French. Course taught in French. Oral skills stressed. Grammar reinforced by dialogue memorization and pattern drills. Correct pronunciation and the ability to distinguish sounds emphasized. Question-answer technique helps students transfer patterns to free conversation. Lab assignment given daily.

French 14

Each student progresses at his own rate of speed and covers differing amounts of material.

At the end of the quarter each student receives the units of credit he has earned (from an expected minimum of 1 to a theoretical maximum of 24).

Mastery of each instructional unit is required before the student proceeds to the next. As a result: the final grade for the quarter will normally be A or B for all students.

Class (5 meetings per week) and laboratory attendance are not controlled but highly recommended.

The student is primarily responsible for directing his own learning (he receives suggested study procedures and individual guidance when needed). Also new vocabulary patterns are presented to him before he tackles them on his own.

Tests are given outside regular class hours to each student when he is ready.

2. Elementary French. (4) I, II, III. The Staff

Prerequisite: French 1 or equivalent.

A continuation of French 1. Course taught in French. Readings, essays, French geography included, the latter by means of slides. Lab assignment given daily.

3. Elementary French. (4) I, II, III. The Staff

Prerequisite: French 2 or equivalent.

A continuation of French 2. Course taught in French. Emphasis on readings and short essays rather than on dialogues. Slide programs given to encourage class discussion. Lab assignment given daily.

4. Intermediate French. (4) I, II, III. The Staff

Prerequisite: French 3 or equivalent.

Taught in French, the course reviews basic structures with new elements added. Vocabulary development stressed by means of original sentences and weekly essays. Reading selections to help develop oral-written correspondences included in the course. Lab assignment given daily.

5. Intermediate French. (4) I, II, III. The Staff

Prerequisite: French 4 or equivalent.

A continuation of French 4. Course taught in French. Basic structures reviewed. Supplementary readings such as *L'Etranger*, *Huis Clos*, etc., are emphasized. Lab assignment given daily.

6. Intermediate French. (4) I, II, III. The Staff

Prerequisite: French 5 or equivalent.

A basic text, used for the acquisition of vocabulary and the practice of essay writing, also stresses aspects of civilization and is complemented by readings of poems, plays, or novels.

8A. French Conversation. (2) I, II, III.Prerequisite: French 3 or equivalent. **The Staff****8B. French Conversation. (2) I, II, III.**Prerequisite: French 4 or equivalent. **The Staff****8C. French Conversation. (2) I, II, III.**Prerequisite: French 5 or equivalent. **The Staff****14. Individualized Instruction 1-6. (1-24)**I, II, III. **The Staff**

Student proceeds at own pace in completing achievement levels centered around units of learning with self-correcting oral and written tests. Each achievement level, equivalent to one quarter, must be completed before proceeding to next level. Two group meetings, three consultations per week.

14R. Individualized Instruction 4-6—**Reading Emphasis. (1-12) I, II, III.****The Staff**

Prerequisite: French 3, or equivalent.

Designed for 1) undergraduate students interested in emphasizing the reading skills who wish to complete the second year of French at their own pace, and 2) graduate students wanting to develop a reading knowledge of French for graduate language exams. (Not recommended for majors, minors and those who want to continue the study of French beyond the second year.)

18A-B. Advanced French Conversation.(2-2) I, II, III. **The Staff**

Prerequisite: French 6 or 8C or equivalent.

18A. Political, philosophical, and sociological themes.

18B. French literature and literary criticism.

19. Intensive Practice in Spoken French. (4)I, II, III. **The Staff**

Prerequisite: French 6 or 8C or equivalent.

An intensive encounter with spoken French designed to develop communication skills. Systematic assimilation of oral structures through the study of film, sound tracks, and tapes. Exercises in oral expression. Active expansion of vocabulary and means of expression.

25X. Seminar on French Literature in**Translation. (4) I, II, III. The Staff**

Discussion of subjects of major interest pertaining to French literature and French culture in general—for example, Surrealism, Existentialism, the Avant-garde, the French Film, Modern French Drama, French Sources of American Culture. Subject will vary with instructor. *This course is open only to freshmen and sophomores.* Discussion and readings in English.

26. French Composition. (3) I, II, III.**The Staff**

Prerequisite: French 6 or equivalent.

Primarily designed to help students develop a writing skill in the French language. French grammar is reviewed but the coverage of this subject is limited to concrete situations arising from student's own compositions. Especially difficult grammatical topics are discussed upon students' request.

27. Development of Advanced Reading Skill**in French. (3) I, II, III. Mr. Malet**

Prerequisite: French 6 or equivalent.

Designed to guide intermediate students of French through the difficulties involved in reading, within a reasonable amount of time, unabridged and unaltered French texts of considerable length, such as are assigned in courses of French literature. It is highly recommended that French 26 be taken concurrently.

30. Advanced Reading and Composition.(3) I, II, III. **The Staff**

Prerequisite: French 26.

Training in analysis of literary texts by French critical techniques and in writing compositions.

Upper Division Courses

Please note: French 26 and 30 (or the consent of the department) are prerequisites for all upper division courses taught in French. French majors should note that no more than 8 units of French courses taught in English may be counted toward the major.

102. Background of Modern French. (4) III.**Mr. Ashby**

The origins of the French language and an overview of its linguistic development with emphasis on the historical and cultural background. Lectures and readings in French.

***†102X. Social Attitudes and Language.**(4) I, II, III. **Mr. Ashby**

A new approach to language, stressing the development of major modern Western languages, as

* Not to be given 1973-74.

† French majors please note that no more than 8 units of French courses taught in English may be counted toward the major.

affected by social and cultural factors. Lectures and readings in English.

103A-B-C. Phonetics. (3-3-3) Yr.

Mr. Malécot

Prerequisite: 103A is prerequisite to 103B and 103C.

Basic concepts of articulatory phonetics, phonetic transcription, and a detailed analysis of the conversational style of the Parisian professional class. Practice with recorded models in the Language Laboratory. Lectures and readings in French.

*104A-B. Introduction to Stylistics. (4-4)

I, II, III.

Mr. Masson

Comparative stylistics, French and English. Theory and practice. Lectures and readings in French. Formerly 128A-B.

105A. Introduction to French Linguistics. (4)

I.

Mr. Malécot

A survey of the basic concepts of modern linguistics and the contributions of the principal French linguists. Lectures and readings in French.

105B. Introduction to Modern French

Morphology. (4) II.

Mr. Malécot

Prerequisite: French 105A.

A study of number and gender inflections in the French noun and pronoun. Lectures and readings in French.

105C. Introduction to Syntax of Modern

French. (4) III.

Mr. Ashby

Prerequisite: French 105A.

An analysis of well-formed French sentences and an attempt to establish rules which will account for the syntactic structure of these sentences. Lectures and readings in French.

106. History of French Culture. (4) I, II, III.

Mrs. Delattre

A study of the historical development and principal achievements of French culture from its origins to the 20th century. Lectures and readings in French.

109A-B-C. Introduction to French

Literature. (4-4-4) Yr.

The Staff

An introduction to French literature, spanning French literature from its medieval origins to the contemporary period. Authors and movements whose contribution to world culture has been most considerable will be stressed. Lectures and readings in French.

†109X-Y-Z. Survey of French Literature in

Translation. (4-4-4) Yr.

The Staff

Authors, genres, themes, and movements which have had the greatest impact upon world literature will be stressed: e.g., the French epic, the Tristan legend, the Arthurian romances, the *Romance of the Rose*, Montaigne, French Classicism, *Candide*, Baudelaire, Proust, Sartre and others. Lectures and readings in English.

*115. Explication de Textes. (4) I, II, III.

Mrs. Delattre

A detailed study of literary structure based on analysis of short excerpts from various periods and genres. Lectures and readings in French. Formerly 100A-B.

*136A-B-C. Medieval Literature. (4-4-4) Yr.

Mr. Maddox

Designed to teach undergraduates how to read Old French and to introduce them to the works, authors, genres, and styles of medieval French literature.

Readings from the saints' lives, *chansons de geste*, *romans courtois*, lyric poetry, medieval drama, and prose chronicles are combined with a critical and historical survey of literary trends in medieval France. Lectures and readings in French. Formerly 110A-B-C.

*†137X. Love in the Medieval French Narrative. (4) I, II, III.

Mr. Maddox

A study of seven medieval French guides to the art of love and of the thematic treatment of love in a variety of texts, including *Tristan et Iseut*, the lays of Marie de France, the romances of Chrétien de Troyes, *The Romance of the Rose*, *Aucassin and Nicolette*, and the *fabliaux*. Lectures and readings in English. Formerly 111.

†138X. The Medieval French Drama.

(4) I, II, III.

Mr. Maddox

A study of the origins of Medieval European drama and of the development, staging, and critical theory of French drama with readings of major dramatic works to 1500. Lectures and readings in English.

*140A. The Generation of Rabelais.

(4) I, II, III.

Mr. Sonier

A course on French literature of the beginning of the 16th century. The main emphasis will be on Rabelais, but other authors and their works will also be considered, including poets and story tellers such as Marot, Bonaventure des Périers, Marguerite de Navarre. Lectures and readings in French. Formerly 118A.

*140B. French Renaissance Poetry. (4)

I, II, III.

Mr. Sonier

A course on French poetry of the mid-16th century. After studying a group of poets from Lyon (Scève, Pernette du Guillet, Labé), whose works were particularly influenced by the Italian Renaissance, students will consider the works of the Pléiade, whose members (Du Bellay, Ronsard, etc.) intended to revolutionize poetry. Lectures and readings in French. Formerly 118B.

*140C. The Anti-Renaissance. (4) I, II, III.

Mr. Sonier

French literature of the latter part of the 16th century is that of a country wrought asunder by civil and religious strife. Its study, nevertheless, brings one in contact with a great poetic movement, the early Baroque, and with a very great author and sage, Montaigne. Lectures and readings in French. Formerly 118C.

*†141X. Rabelais in Translation (4) I, II, III.

Mr. Sonier

A study of the works of Rabelais in an attempt to discover in them the expression of a popular culture parallel to official literary culture but most often excluded from officially recognized literature. Lectures and readings in English. Formerly 118X.

* Not to be given, 1973-74.

† French majors please note that no more than 8 units of French courses taught in English may be counted toward the major.

150A. Mannerism and Classicism. (4) I, II, III.

Mr. Tobin, Mr. Malet

Analysis of literary, philosophical, and cultural trends of early seventeenth century. Esthetics of Mannerism (Théophile, Saint-Amant), Classicism (Malherbe, Racan), Préciosité (Voiture, Montausier), French Mannerist tragedy (Rotrou, Corneille). Birth of modern Rationalism and importance of Neo-Stoicism in Descartes' works. Class reading and discussions supplemented by lectures on aspects of culture (religion, politics, society). Documentary films used. Lectures and readings in French. Formerly 120A.

150B. Baroque. (4) I, II, III.

Mr. Tobin, Mr. Malet

The rise of baroque spirit in all literary genres between 1660 and 1680. Pascal, Racine, Molière, La Fontaine, La Rochefoucauld, Mme de La Fayette studied as examples of that ideal which attempts a balance, through tension, of Mannerism and Classicism. Discussions of baroque art and architecture will supplement literary analyses. Lectures and readings in French. Formerly 120B.

150C. Aspects of the Seventeenth Century.

(4) I, II, III. Mr. Tobin, Mr. Malet

A course whose specialized focus changes from year to year. For 1973-74 the course will deal with "Mythological Heroes of the Seventeenth Century" and will include works by Rotrou, Corneille, Molière, Racine, and Fénelon. Lectures and readings in French. Formerly 120C.

***160A-B-C. The Eighteenth Century.**

(3-3-3) Yr. Mr. Temmer, Mr. Sturm

Development of libertine thought traced from Saint Evremont, Fontenelle and Bayle to theories of Montesquieu, Diderot, Voltaire, Rousseau. Problems of the emergence of the novel, autobiography, satire studied. Lectures and readings in French. Formerly 121A-B-C.

†161X. The Utopian Tradition. (4) I, II, III.

Mr. Sturm

Beginning with utopian thought in the French Enlightenment (Diderot, Rousseau, Voltaire, and others), this course will analyse the aspirations of major writers like Saint-Simon, Fourier, Sartre, and Marcuse towards a socially perfect order and the problems arising therefrom. Lectures and readings in English.

†162X. Contrasts in Wit and Satire: *Candide* and *Rasselas*. (4) I, II, III. Mr. Temmer

The course will focus on the stylistic and thematic structure of Voltaire's masterpiece as well as on his refutation of philosophical optimism. Samuel Johnson's *Rasselas* will be studied by way of contrast. Lectures and readings in English.

†163X. Diderot on Sex, Fiction and Role-Playing. (4) I, II, III. Mr. Temmer

A study of Diderot's concern with human happiness (sexual freedom in *The Supplement to the Voyage of Bougainville*), with the theory and practice

of the novel (*Jacques the Fatalist*), with acting on the stage (*Paradox on the Comedian*), with the alienated man (*Rameau's Nephew*). Lectures and readings in English.

†164X. Rousseau and the Confessional Urge.

(4) I, II, III.

Mr. Temmer

An in-depth analysis of Rousseau's *Confessions*, one of the most influential documents of Western Civilization. Also to be studied: *The Fifth rêverie of the solitary wanderer*. Lectures and readings in English.

***170A. The Nineteenth Century I. (4)**

I, II, III.

Mr. Walker

Romanticism to realism. French poetry and prose between 1800 and 1850. Readings of such authors as Chateaubriand, Lamartine, Vigny, Hugo, Musset, Stendhal, Balzac. Chief qualities of the works selected, major themes, images, techniques, kinds of creative activity involved, emergent visions of reality. Lectures and readings in French. Formerly 112A.

170B. The Nineteenth Century II. (4)

I, II, III.

Mr. Walker

Realism, the Parnasse, the beginnings of modern poetry. French verse and prose of the middle of the nineteenth century. Readings of such authors as Baudelaire, Gautier, Mérimée, Leconte de Lisle, Nerval, Michelet, Flaubert. Lectures and readings in French. Formerly 112B.

170C. The Nineteenth Century III. (4)

I, II, III.

Mr. Walker

Naturalism, symbolism, decadence, the *fin de siècle*. French poetry and prose from 1870 to 1900. Readings of such authors as Zola, Mallarmé, Verlaine, Corbière, Rimbaud, Laforgue. Lectures and readings in French. Formerly 112C.

†170X. Nineteenth Century French Literature in Translation. (4) I, II, III.

Mr. Walker

Readings of selected nineteenth century French authors such as Hugo, Baudelaire, Mallarmé, Verlaine, Rimbaud, Chateaubriand, Balzac, Stendhal, Flaubert, Zola. Lectures and readings in English. Formerly 112X.

171. The Romantic Movement in France.

(4) I, II, III.

Mrs. Delattre

A study of French romanticism as expressed in literature, art, and music and in the social and political life of France between 1820 and 1835. Lectures and readings in French.

†172X. Zola and the Rise of the Modern

World. (4) I, II, III.

Mr. Walker

A study of the role played by the creative artist in the process of cultural change; the impact of change on the artist: the opportunities that change gives the artist; the artist as world creator. Lectures and readings in English.

173. Balzac. (4) I, II, III.

Mrs. Delattre

Prerequisite: French 109C.

A study of selected works by one of the world's greatest novelists and one of the chief founders of modern fiction. Lectures and readings in French.

* Not to be given, 1973-74.

† French majors please note that no more than 8 units of French courses taught in English may be counted toward the major.

176X. The Symbolist Heritage. (4) I, II, III.

Mr. Walker and Mrs. Cushing

A study of key poems and prose texts which throw light on aspects of Symbolism. Lectures and readings in English.

†177X. Literature and Religion in Modern**France. (4) I, II, III.**

Mr. Walker

Religious aspects of French fiction and poetry since the French Revolution. Readings of selected authors such as Hugo, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac. Lectures and readings in English.

†178. French Film: Theory and Practice.

(4) I, II, III.

Miss Greene

A study of the various film movements in France (Surrealism, New Wave, Cinema vérité, Political filmmaking of the 1960's) through the analyses of texts (especially Cocteau, Bazin, the Dziga Vertov group) and films (by Cocteau, Renoir, Godard). Lectures and readings in English.

179X. Decadence. (4) I, II, III.

Mr. Murray, Miss Greene

A study of the decadent phenomenon as seen in such writers as Lautréamont, Proust, Gide, Céline, Genet, selections to be based on available translations. The course will be of interest to students in art and music as well as in literature. Lectures and readings in English.

180A–B–C. Contemporary Novel, Essay, and Theater. (4–4–4) Yr.

Mr. Murray, Miss Greene

An introduction to the major currents and figures in twentieth century literature. Such authors as Proust, Gide, Sartre, Malraux, Camus, Ionesco, Beckett, Genet, Apollinaire studied. Lectures and readings in French. Formerly 131A–B–C.

***†180X–Y. Representative Works of French Literature in Translation. (4–4) I, II, III.**

The Staff

Reading of works of contemporary writers such as Camus, Sartre, Beckett and Genet. Investigation of the socio-aesthetic problems posed by these writers. Lectures and readings in English. Formerly 108X–Y.

182A–B. Contemporary French Institutions.

(4–4) I, II, III.

Mr. Beachboard

Contemporary France, present institutions, and physical, economic, political aspects. Designed particularly for credential majors. Lectures and readings in French. Formerly 126A–B.

†182X–Y. The Twentieth Century French**Novel in Translation. (4–4) I, II, III.**

Mrs. Cushing

The evolution of contemporary French fiction. First Quarter: the influence of Symbolism—Valéry, Gide, Mauriac, and others. Second Quarter: the growth of the New Novel—Breton, Sartre, Robbe-Grillet, Beckett, and others. Lectures and readings in English.

***†183X. An Introduction to Structuralism.**

(4) I, II, III.

Mr. Malet

An introduction to one of the main intellectual movements of our times as it may be grasped through

the writings of Levi-Strauss, Barthes, Piaget, Todorov, and others. This course should be of interest not only to students of French culture but to majors in English and other literatures, Art, History, Linguistics, Mathematics, Physics, Chemistry, Biology, and the Social Sciences. Lectures and readings in English.

184A–B. Contemporary French Poetry. (4–4) I, II, III.

Mrs. Cushing

From Baudelaire to Prévert: a critical study of significant poems since 1857, against the background of Parnassian, Symbolist, Cubist and Surrealist ideas. Study of poetic materials and techniques. Several short papers, explications de texte, practice in translation. Lectures and readings in French. Formerly 132.

***†184X. French Novel Into Film. (4) I, II, III.**

The Staff

The different ways of transforming a novel into a feature film will be studied. Lectures and readings in English.

†185X. Contemporary French Theatre in*Translation. (4) I, II, III.**

The Staff

A study of the major French dramatists of the twentieth century, such as Sartre, Camus, Artaud, Beckett, Ionesco, Genet. Emphasis placed on contemporary plays. Lectures and readings in English. Formerly 123.

†186. Poets and Painters in 20th Century**France. (4) I, II, III.**

Mrs. Cushing

Prerequisite: A reading knowledge of French, some background in early 20th-century European art, or consent of instructor.

A study in the relationships between poets and painters, concentrating on collaborations (illustrated books or *livres de peintres*). The confrontation between verbal and visual images will be a main concern of the course. Guest lecturers from the Art Department and the library will discuss aesthetic and technical aspects of the Book. Lectures in English, readings in French. French majors please note that no more than 8 units of French courses taught in English may be counted toward the major.

***†186X. Beckett and Godard: The Difficulties of Creation. (4) I, II, III.**

Miss Greene

An examination of the way these two artists, working in different fields, are questioning the nature of their art and entertaining the idea that further creation may no longer be possible. Lectures and readings in English.

***†187. Surrealist Film. (4) I, II, III.**

Mrs. Cushing, Miss Greene

A study of the Surrealist film of the 1920's and 1930's. Complementary Surrealist texts read. Course designed for upperclassmen and graduate students. Lectures and readings in French. Formerly 133.

***†187X. French Cinema of the 1930's.**

(4) I, II, III.

The Staff

Themes and development of French cinema from 1930 to the outbreak of World War II. Lectures and readings in English.

* Not to be given, 1973–74.

† French majors please note that no more than 8 units of French courses taught in English may be counted toward the major.

***†187Y. French Cinema Since World War II.**
(4) I, II, III. The Staff

Themes and cinematic innovations in post war cinema of France. Lectures and readings in English.

***†188. The French Art Song from Symbolism to Surrealism.** (4) II.

Mrs. Cushing, Mrs. Hsu

Prerequisite: Open to Music and French majors or permission of the instructors.

An interdisciplinary study in text-music relationship from Fauré to Poulenc; from Baudelaire to Eluard. Lectures in English, readings in French. May be taken for credit only once as either French 188 or Music 188. French majors please note that no more than 8 units of French courses taught in English may be counted toward the major.

***†188X. Contemporary French Drama and Film in Translation.** (4) I, II, III.

Miss Greene

An examination of contemporary currents in French theater and film. Concentrates on theater of the absurd—Beckett, Ionesco and Genet, as well as such filmmakers as Godard. Lectures and readings in English. Formerly 134.

***†189X. Political Attitudes in 20th Century French-Italian Novel and Film in Translation.** (4) I, II, III.

Miss Greene and Mr. Lawton

The relation between novel and film; the position of the European intellectual vis-à-vis politics; the distinction between committed art and propaganda; the history of Italian neo-realism; Existentialism in France. Lectures and readings in English. May be taken for credit only once as either French 189X or Italian 189X. Formerly 135.

199. Independent Studies in French.

(1-5) I, II, III. The Staff

Individual investigations in literary fields. 199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses

***201. Problems of French Linguistics.** (3)

I, II, III. The Staff

Syntactic study of French noun. Morphological study of verbs in spoken French: a structural analysis.

202A-B. Old French Philology.

(3-3) A I, B II. Mr. Ashby

Prerequisite: A. one year of college Latin or equivalent or consent of instructor. B. French 202A.

Grammar of medieval dialects, intensive study of Old French as preserved in representative texts.

203. Advanced French Phonetics. (3) I.

Mr. Malécot

An accelerated review of the principles covered in French 103A-B-C, but without laboratory practice. An introduction to acoustic phonetics.

* Not to be given, 1973-74.

† French majors please note that no more than 8 units of French courses taught in English may be counted toward the major.

205. Bibliography and Research Techniques.

(1) I, II, III. Mr. Tobin

A brief introduction to bibliographical theory and practice, the principle bibliographies and other sources of information useful for the study of French literature, and ways of obtaining different types of information having to do with French literature. Recommended for all graduate students concerned with, or specializing in, French literature.

***207A. Physiological Phonetics.** (3) III.

Mr. Malécot

Prerequisite: Speech 155B or equivalent.

A survey of research leading to the specification of the principal articulatory patterns of speech; bibliography; individual projects. Given in English if students from other departments are registered.

***207B. Acoustic Phonetics.** (3) II.

Mr. Malécot

Prerequisite: Speech 155A or equivalent.

A survey of research leading to the specification of the acoustic cues for speech; bibliography; individual projects. Given in English if students from other departments are registered.

***207C. Descriptive Phonetics.** (3) I.

Mr. Malécot

Prerequisite: French 103A or equivalent.

A review of the work of the principal French phoneticians since 1900; a critical analysis of research methods and presently accepted principles; bibliography; individual projects. Given in French.

209A-B. Linguistics. (3-3) I, II, III.

Mr. Malécot

A brief history of linguistics followed by a more detailed analysis of the contributions of De Saussure, Martinet, Dubois, and Ruwet. Practice in applying various methods of analysis to French sentences.

***232A-B. French Literary Criticism.**

(3-3) I, II, III. The Staff

An examination of the history of French literary criticism and an inquiry into the different approaches employed by contemporary critics.

235. Introduction to Old French. (3)

Mr. Maddox

An intensive introduction to the reading and analysis of Old French texts. Formerly 204.

236. Studies in Medieval Literature. (3-15)

Mr. Maddox

Selected topics for research and discussion based on texts drawn from saints' lives, epic, courtly romance, lyric poetry, drama, and chronicles. May be repeated with a different topic for a maximum of eighteen units. Formerly 206.

240. Studies in the Sixteenth Century. (3-15)

Mr. Sonier

A. Rabelais, B. Pléiade, C. Montaigne, D. French Renaissance Theatre, E. Renaissance Court poetry.

This course may be repeated for a maximum of 15 units. Formerly 218.

250. Studies in the Seventeenth Century.

(3-15) Mr. Temmer, Mr. Srtum

A. Corneille, B-1. Racine, B-2. Racine, C. Mo-

lière, D. Pascal, E. LaFontaine, F. Moralistes, G. Classical Hero, H. The Baroque.

This course may be repeated for a maximum of twenty-seven units. Formerly 220.

260. Studies in the Eighteenth Century.

(3-15) Mr. Temmer, Mr. Sturm

A. Voltaire, B. Diderot, C. Rousseau, D. Rousseau, E. The Novel, F. Political Thought in Belles-Lettres Literature, G. Utopia in the *Siecle des Lumieres*.

This course may be repeated for a maximum of twenty-one units. Formerly 221.

270. Studies in the Nineteenth Century.

(3-15) Mr. Walker, Mrs. Delattre,

Mrs. Cushing

Study in depth of selected texts of the nineteenth century with emphasis on A. Balzac, B. Stendhal, C. Flaubert, D-1. Zola, D-2. Zola, E. Romantic Poetry, F. Baudelaire, G. Symbolism, H. Literature of the Second Empire, I. Theater, J. Hugo.

This course may be repeated for a maximum of thirty-three units. Formerly 212.

280. Studies in the Twentieth Century.

(3-15) Mrs. Cushing, Mr. Murray,

Miss Greene

A-1. Proust, A-2. Proust, B. Gide, C. Apollinaire, D-1. Existentialism, D-2. Existentialism, F. Theatre, G. Essay, H. Surrealism, I. Mallarmé-Valéry, J. Contemporary Criticism, K. Camus.

May be repeated for a maximum of thirty-six units. Formerly 231.

*289. La littérature maudite. (3) Miss Greene

The question of "la littérature maudite" from Sade to the present examined. Nerval, Lautréamont, Baudelaire, Genet also studied.

596. Directed Reading and Research. (2-6)

The Staff

Individual tutorial. Instructor usually student's major professor. Students doing initial research on the doctoral dissertation may sign up for this course. Students must take a minimum of 2 units per quarter. No more than half the units necessary for the master's degree may be taken in 596. Letter grade given.

597. Individual Study for Master's Comprehensive Examinations and Ph.D.

Examinations. (1-12) The Staff

Instructor normally should be the student's major professor or chairman of his doctoral committee. S/U grade.

598. Master's Thesis Research and

Preparation (1-12) The Staff

Only for research underlying thesis, writing thesis. Instructor should be chairman of student's thesis committee. S/U grade given. Since student is granted 6 units' credit toward the degree, no unit credit given.

599. Dissertation Research and Preparation.

(1-12) The Staff

Only for the writing of the doctoral dissertation. Instructor should be chairman of student's doctoral committee. Grade of S/U given.

ITALIAN

Lower Division Courses

*1. Elementary Italian. (4) I, II, III.

Beginner's course. The Staff

2. Elementary Italian. (4) I, II, III. The Staff

(Continuation of 1.)

3. Elementary Italian. (4) I, II, III. The Staff

(Continuation of 2.)

4. Intermediate Italian. (4) I, II, III. The Staff

(Continuation of 3.)

5. Intermediate Italian. (4) I, II, III. The Staff

(Continuation of 4.)

6. Intermediate Italian. (4) II, III. The Staff

(Continuation of 5.)

8A-B-C. Italian Conversation. (2-2-2)

I, II, III. The Staff

Prerequisite: Italian 3 or consent of the instructor.

11. Intensive Italian. (8) I, II, III. The Staff

Intensive course designed primarily for graduate students. The course will stress translation of Italian literary texts.

14. Individualized Instruction 1-6.

(4) I, II, III. The Staff

A student will proceed at his own pace in completing each achievement level which is equivalent to one quarter of Italian. Students attend two group meetings and three consultations per week. Students must complete one level achievement unit before proceeding to the next level. Students earn 4 quarter units of credit for each level of achievement unit completed. May be repeated for a maximum of 24 units.

*15A-B-C. Elementary Italian—Intensive Course. (8-8-8) Yr. The Staff

Series equivalent to the two year series of Italian 1 through 6. Meets four times a week in two-hour periods. Open to undergraduate, as well as to graduate students.

*16A-B. Intensive Elementary Italian.

(8-8) I, II, III. The Staff

A two-course sequence allowing the student to complete Italian 2 and 3 in the first quarter and Italian 4 and 5 in the second. Meets four times a week in two-hour periods.

*18A-B. Accelerated Intensive Italian.

(12-12) I, II. The Staff

The objective of this course is to offer to interested students the opportunity to take an intensive language study program which utilizes broad cultural investigations. Students will study the equivalent of six quarters of Italian in two quarters. Language and culture will be presented daily by a team of three teachers by means of the classroom program. In addition, there will be a coordinated multi-media supplementation and enrichment that is integrated with the classroom program.

* Not to be given, 1973-74.

** An intensive course in Italian for graduate students is also offered. See Italian 11.

Upper Division Courses

Italian 6 or consent of the department.

101A-B-C. Conversation and Composition.

(3-3-3) I, II, III.

Mr. Rossi

Original composition, translation, discussion of selected passages from Italian literature.

106A-B. Italian Culture. (4-4) I, II, III.

Mr. De Nardo

An historical, philosophical, aesthetic overview of Italian culture from its medieval origins to the contemporary period.

*109A-B-C. Survey of Italian Literature.

(4-4-4) Yr.

Mr. Rossi

Survey of Italian literature from the early authors of the thirteenth century to the contemporary writers. Discussion of all major authors and cultural currents.

110A-B-C. Dante: La Divina Commedia.

(4-4-4) Yr.

Mr. Bonadeo

Dante's *The Divine Comedy: Inferno, Purgatory, and Paradise* studied in their broad historical and moral contexts based on a close reading of the text.

111A-B-C. Trecento-Fourteenth Century Italian Literature. (4-4-4) I, II, III.

Mr. Bonadeo

The literature of the Italian Middle Ages: Dante, Petrarch, and Boccaccio.

112A-B-C. Masterworks of the Italian

Renaissance. (4-4-4) Yr. Mr. Bonadeo

Readings in depth from major authors of the fifteenth and sixteenth centuries such as Machiavelli, Ariosto, Castiglione, and Tasso.

*†114X-Y-Z. Masterpieces of the Italian Middle Ages in Translation. (4-4-4)

I, II, III.

Mr. Bonadeo

A study of the spiritual, moral and material values in the world of the Italian Middle Ages through the works of Dante, Petrarch, and Boccaccio.

115A-B-C. Italian Literature of the Nineteenth Century. (4-4-4) Yr.

Mr. Lawton

Covers the various currents of Italian Romanticism from the early romantics (Foscolo, Leopardi, Manzoni) to the poetry of the end of the century represented by poets such as Pascoli and D'Annunzio. Genres include fiction, poetry and autobiography.

†116X. Machiavelli. (4) I, II, III.

Mr. Bonadeo

A study of class conflicts, the uses of power, and the nature of war in the works and times of Machiavelli.

†116Y. Love and Chivalry in the Italian

Renaissance. (4) I, II, III. Mr. Bonadeo

A study of the practice and ideal of love and

* Not to be given, 1973-74.

† Students taking this course for credit towards an Italian Major will do the reading and writing in Italian.

chivalry within the social context of the times of Ariosto and Castiglione.

†116Z. Love and Society in the Italian

Renaissance. (4) I, II, III. Mr. Bonadeo

A study of moral and social conflicts and aspirations in the poetry of Michelangelo and the epic of Tasso.

117. Twentieth Century Italian Theater.

(4) I, II, III.

Mr. Rossi

Discussion of the Italian theater of the twentieth century with particular emphasis on the works of L. Pirandello and U. Betti. Other minor authors such as Chiarelli, Rosso di San Secondo will be discussed. Formerly 117A.

118. Modern Italian Novel. (4) I, II, III.

Mr. Rossi

Discussion of the major Italian novelists of the twentieth century such as Pirandello, Moravia, Tomasi, Vittorini, Pavese. The history of the novel in modern times also discussed. Formerly 117C.

119. Contemporary Italian Poetry. (4)

I, II, III.

Mr. Rossi

The course will deal mainly with the works of Ungaretti, Montale, Quasimodo, but references will be made to Italian, French, and American poetry of the nineteenth century in order to trace the origin of modern Italian poetry. Formerly 117B.

*120. The New Novel in Italy. (4) I, II, III.

The Staff

Reading and interpretation of modern Italian novels and critics. Open to upper division Italian majors only.

†139X-Y-Z. Survey of Literature in

Translation. (4-4-4) Yr. Mr. Lawton

First quarter: Medieval and Renaissance periods with readings from Dante, Petrarch, Boccaccio and Machiavelli; Second quarter: Literature of the High Renaissance and seventeenth and eighteenth centuries; Third quarter: Romantic period and the twentieth century, including works of Pirandello and Moravia as well as the theatre, the novel, poetry, post-war Italian film.

†142X. Moravia, Pirandello, Fellini: Contemporary Italian Fiction, Drama, Film.

(4) I, II, II

Mr. Rossi

A discussion, in English, of Moravia, a major modern Italian fiction writer, Pirandello, a major modern Italian dramatist, and Fellini, a major modern Italian filmmaker with particular emphasis on their handling of problems connected with eros, religion, politics.

†188X-Y. Introduction to Italian Cinema.

(4-4) I, II, III.

Mr. Lawton

Introduction to major trends in Italian cinema from the silent period to the Sixties.

*†189X. Political Attitudes in 20th Century French-Italian Novel and Film in Translation. (4) I, II, III.

Mr. Lawton and Miss Greene

The relation between novel and film; the position of the European intellectual vis-à-vis politics; the distinction between committed art and propaganda;

the history of Italian neo-realism; Existentialism in France. May be taken for credit only once as either French 189X or Italian 189X. Formerly 135.

- 199. Independent Studies in Italian.**
(1-5) I, II, III. The Staff
Independent investigations in literary fields.

- 596. Directed Reading and Research. (1-6)**
The Staff

FOREIGN LITERATURE AND FILM IN ENGLISH TRANSLATION

(Courses for which no knowledge of a foreign language is required.)

French (Please note: No more than 8 units of courses taught in English, including courses in French literature and film in English translation, can be counted towards a French major.)

- 25X. Seminar on French Literature in Translation. (4) I, II, III.** The Staff
Discussion of subjects of major interest pertaining to French literature and French culture in general—for example, Surrealism, Existentialism, the Avant-garde, the French Film, Modern French Drama, French Sources of American Culture. Subject will vary with instructor. *This course is open only to freshmen and sophomores.*

- *102X. Social Attitudes and Language. (4)**
I, II, III. Mr. Ashby
A new approach to language, stressing the development of major modern Western languages, as affected by social and cultural factors.

- 109X-Y-Z. Survey of French Literature in Translation. (4-4-4) Yr.** The Staff
Authors, genres, themes, and movements which have had the greatest impact upon world literature will be stressed: e.g., the French epic, the Tristan legend, the Arthurian romances, the *Romance of the Rose*, Montaigne, French Classicism, *Candide*, Baudelaire, Proust, Sartre and others.

- *137X. Love in the Medieval French Narrative. (4) I, II, III.** Mr. Maddox
A study of seven medieval French guides to the art of love and of the thematic treatment of love in a variety of texts, including *Tristan et Iseut*, the lays of Marie de France, the romances of Chrétien de Troyes, *The Romance of the Rose*, Aucassin and Nicolette, and the fabliaux. Formerly 111.

- 138X. The Medieval French Drama. (4)**
I, II, III. Mr. Maddox
A study of the origins of Medieval European drama and of the development, staging, and critical theory of French drama with readings of major dramatic works to 1500.

- *141X. Rabelais in Translation. (4) I, II, III.**
Mr. Sonier
A study of the works of Rabelais in an attempt to discover in them the expression of a popular culture parallel to official literary culture but most often excluded from officially recognized literature. Formerly 118X.

- 161X. The Utopian Tradition. (4) I, II, III.** Mr. Sturm
Beginning with utopian thought in the French Enlightenment (Diderot, Rousseau, Voltaire, and others), this course will analyse the aspirations of major writers like Saint-Simon, Fourier, Sartre, and Marcuse towards a socially perfect order and the problems arising therefrom.

- 162X. Contrasts in Wit and Satire: Candide and Rasselas. (4) I, II, III.** Mr. Temmer
The course will focus on the stylistic and thematic structure of Voltaire's masterpiece as well as on his refutation of philosophical optimism. Samuel Johnson's *Rasselas* will be studied by way of contrast.

- 163X. Diderot on Sex, Fiction and Role-Playing. (4) I, II, III.** Mr. Temmer
A study of Diderot's concern with human happiness (sexual freedom in *The Supplement to the Voyage of Bougainville*), with the theory and practice of the novel (*Jacques the Fatalist*), with acting on the stage (*Paradox on the Comedian*), with the alienated man (*Rameau's Nephew*).

- 164X. Rousseau and the Confessional Urge. (4) I, II, III.** Mr. Temmer
An in-depth analysis of Rousseau's *Confessions*, one of the most influential documents of Western Civilization. Also to be studied: *The Fifth rêverie of the solitary wanderer*.

- 170X. Nineteenth Century French Literature in Translation. (4) I, II, III.** Mr. Walker
Readings, in translation, of selected nineteenth century French authors such as Hugo, Baudelaire, Mallarmé, Verlaine, Rimbaud, Chauteaubriand, Balzac, Stendhal, Flaubert, Zola. Formerly 112X.

- 172X. Zola and the Rise of the Modern World. (4) I, II, III.** Mr. Walker
A study of the role played by the creative artist in the process of cultural change: the impact of change on the artist; the opportunities that change gives the artist; the artist as world creator.

- *176X. The Symbolist Heritage. (4) I, II, III.** Mr. Walker and Mrs. Cushing
A study of key poems and prose texts which throw light on aspects of Symbolism.

- 177X. Literature and Religion in Modern France. (4) I, II, III.** Mr. Walker
Religious aspects of French fiction and poetry since the French Revolution. Readings of selected authors such as Hugo, Balzac, Flaubert, Baudelaire, Huysmans, Claudel, Gide, and Mauriac.

- 178X. French Film: Theory and Practice. (4) I, II, III.** Miss Greene
A study of the various film movements in France (Surrealism, New Wave, Cinéma vérité, Political filmmaking of the 1960's) through the analyses of texts (especially Cocteau, Bazin, the Dziga Vertov group) and films (by Cocteau, Renoir, Godard).

* Not to be given, 1973-74.

179X. Decadence. (4) I, II, III.

Mr. Murray, Miss Greene

A study of the decadent phenomenon as seen in such writers as Lautréamont, Proust, Gide, Céline, Genet, selections to be based on available translations. The course will be of interests to students in art and music as well as in literature.

***180X-Y. Representative Works of French Literature in Translation. (4-4) I, II, III.**

The Staff

Reading of works of contemporary writers such as Camus, Sartre, Beckett and Genet. Investigation of the socio-aesthetic problems posed by these writers. For non-French majors with a good literary background only. Formerly 108X-Y.

182X-Y. The Twentieth Century French Novel in Translation. (4-4) I, II, III.

Mrs. Cushing

The evolution of contemporary French fiction. First Quarter: the influence of Symbolism—Valéry, Gide, Mauriac, and others. Second Quarter: the growth of the New Novel—Breton, Sartre, Robbe-Grillet, Beckett, and others.

***183X. An Introduction to Structuralism.**

(4) I, II, III.

Mr. Malet

An introduction to one of the main intellectual movements of our times as it may be grasped through the writings of Levi-Strauss, Barthes, Piaget, Todorov, and others. This course should be of interest not only to students of French culture but to majors in English and other literatures, Art, History, Linguistics, Mathematics, Physics, Chemistry, Biology, and the Social Sciences.

***184X. French Novel Into Film. (4) I, II, III.**

The Staff

The different ways of transforming a novel into a feature film will be studied.

***185X. Contemporary French Theatre in Translation. (4) I, II, III.**

The Staff

A study of the major French dramatists of the twentieth century, such as Sartre, Camus, Artaud, Beckett, Ionesco, Genet. Emphasis placed on contemporary plays. Formerly 123.

***186X. Beckett and Godard: The Difficulties of Creation. (4) I, II, III.**

Miss Greene

An examination of the way these two artists, working in different fields, are questioning the nature of their art and entertaining the idea that further creation may no longer be possible.

***187X. French Cinema of the 1930's.**

(4) I, II, III.

The Staff

Themes and development of French cinema from 1930 to the outbreak of World War II.

***187Y. French Cinema Since World War II.**

(4) I, II, III.

The Staff

Themes and cinematic innovations in post war cinema of France.

***188X. Contemporary French Drama and Film in Translation. (4) I, II, III.**

Miss Greene

An examination of contemporary currents in French theater and film. Concentrates on theater of the absurd—Beckett, Ionesco and Genet, as well as such filmmakers as Godard. Formerly 134.

***189X. Political Attitudes in 20th Century French-Italian Novel and Film in Translation. (4) I, II, III.**

Miss Greene, Mr. Lawton

The relation between novel and film; the position of the European intellectual vis-à-vis politics; the distinction between committed art and propaganda; the history of Italian neo-realism; Existentialism in France. May be taken for credit only once as either French 189X or Italian 189X. Formerly 135.

Italian (Please note: Students taking these courses for credit towards an Italian major will do the reading and writing in Italian.)

114X-Y-Z. Masterpieces of the Italian Middle Ages in Translation. (4-4-4)

I, II, III.

Mr. Bonadeo

A study of the spiritual, moral and material values in the world of the Italian Middle Ages through the works of Dante, Petrarch, and Boccaccio.

116X. Machiavelli. (4) I, II, III.

Mr. Bonadeo

A study of class conflicts, the uses of power, and the nature of war in the works and times of Machiavelli.

116Y. Love and Chivalry in the Italian

Renaissance. (4) I, II, III.

Mr. Bonadeo

A study of the practice and ideal of love and chivalry within the social context of the times of Ariosto and Castiglione.

116Z. Love and Society in the Italian

Renaissance. (4) I, II, III.

Mr. Bonadeo

A study of moral and social conflicts and aspirations in the poetry of Michelangelo and the epic of Tasso.

139X-Y-Z. Survey of Literature in

Translation. (4-4-4) Yr.

Mr. Lawton

First quarter: Medieval and Renaissance periods with readings from Dante, Petrarch, Boccaccio and Machiavelli; Second quarter: Literature of the High Renaissance and seventeenth and eighteenth centuries; Third quarter: Romantic period and the twentieth century, including works of Pirandello and Moravia as well as the theatre, the novel, poetry, post-war Italian film.

142X. Moravia, Pirandello, Fellini: Contemporary Italian Fiction, Drama, Film.

(4) I, II, III.

Mr. Rossi

A discussion of Moravia, a major modern Italian fiction writer, Pirandello, a major modern Italian dramatist, and Fellini, a major modern Italian filmmaker with particular emphasis on their handling of problems connected with eros, religion, politics.

* Not to be given, 1973-74.

180X-Y-Z. World Cinema. (4-4-4) I, II, III.

Mr. Lawton

Prerequisite: Drama 46; 146 recommended.

Survey of the International Tradition in Cinema. 1st quarter: the contributions of major international film traditions to the universal art of film. 2nd quarter: major American genres, such as the Western, the Gangster film, and Film noir, as well as a study of the American hero. 3rd quarter: Italian cinema since World War II. Not open to Italian majors.

188X-Y. Introduction to Italian Cinema.

(4-4) I, II, III.

Mr. Lawton

Introduction to major trends in Italian cinema from the silent period to the Sixties.

***189X. Political Attitudes in 20th Century**

French-Italian Novel and Film in Translation. (4) I, II, III.

Mr. Lawton and Miss Greene

The relation between novel and film; the position of the European intellectual vis-à-vis politics; the

distinction between committed art and propaganda; the history of Italian neo-realism; Existentialism in France. May be taken for credit only once as either French 189X or Italian 189X. Formerly 135.

Related Courses**Education****SF 390. Curriculum and Instructional Procedures and Materials Used in the****Teaching of French. (3) I. Mr. Avre**

Prerequisite: Major or minor in French.

Required of candidates for the secondary credential with a major or minor in French.

SF 392. Student Teaching: French.

(3-6) I, II, III.

Mrs. Metz

Prerequisite: Admission to secondary credential program and consent of instructor.

Supervised teaching at the secondary level in French.

 GEOGRAPHYJohn E. Estes, Ph.D., *Assistant Professor of Geography.*Michael W. Kuhn, Ph.D., *Assistant Professor of Geography.*

Peter F. Mason, Ph.D., *Assistant Professor of Geography. (Acting Vice Chairman of the Program).*

Norman K. Sanders, Ph.D., *Assistant Professor of Geography.*



Richard L. Haiman, M.A., *Acting Assistant Professor of Geography.*

Sidney R. Frank, M.A., C.C.M., *Research Associate in Meteorology.*

Geographers investigate the surface of the earth as the home of man. The discipline of geography treats man's environment as a system, primarily from the point of view of space through time. Geography attempts to explain the interrelationships between subsystems of man's physical environment, and man's distribution over the earth in terms of his spatial interactions with various physical and cultural phenomena. Geography is an approach to knowledge which is essentially a synthesis emphasizing spatial and ecological considerations.

THE MAJOR

The Geography major is designed to provide a fundamental background for students seeking an interdisciplinary understanding of the world; to offer training for a teaching career in Geography and the Social Sciences; to prepare students for graduate studies in educational theoretical and applied work in Geography; and to prepare students to conduct original research.

The program is organized around systematic, techniques, and regional approaches. Students will normally acquire familiarity with elements of both systematic analysis and regional synthesis. Students interested in becoming professional geographers are encouraged to develop a heavy additional concentration in one or more related disciplines. Specific individual programs will be worked out in consultation with advisers.

PREPARATION FOR THE MAJOR

Required: Geography 2, 3, Biology 1A or 20 or 20Z or 21 or Botany 20 or Environmental Studies 2.

Recommended: One course in statistics; Geology 2, 2L, 117.

* Not to be given, 1973-74.

Requirements for the Major

36 Upper Division units in Geography, including 4 units from systematic courses (e.g., 105, 106, 107, 110, 111, 115A-B, 117, 118, 119, 160, 161, 162, 165, 195, 198, and 199) and at least 8 units from regional offerings (e.g., 102, 141, 144, 145, 148, 150, 153, 154, 155). Geog. 101 and 116 are required of all majors. A maximum of 8 Upper Division units may be included for Geography credit from approved courses in closely related fields, except in cases of credentials programs.

TEACHING CREDENTIALS

The Geography major or minor is a recommended part of the program of studies required for the elementary, secondary, and junior college credential in California. Persons intending to obtain a University recommended teaching credential from the State Board of Education may not include units in related fields for satisfaction of requirements for a Geography major or minor.

GEOGRAPHY

Lower Division Courses

2. Introduction to Human Geography.

(4) II, III. Mr. Haiman, Mr. Kuhn

Prerequisite: Consent of instructor.

An introduction to the geography of man, stressing concepts basic to understanding the variety of man-land relationships arising from the interaction of culture and the physical environment.

3. Elements of Physical Geography.

(4) I, II, III. The Staff

Survey of man's physical environment; distribution and interrelationships of atmospheric phenomena, climate, soils, plant and animal communities, and landforms.

Upper Division Courses

101. Spatial Analysis. (4) II, III.

Mr. Kuhn, Mr. Mason

Prerequisite: Designed for the major. Non-majors should consult instructor.

Introduction to the science of Geography and geographic research, including a review of core concepts, theories, and methodologies important for spatial analysis. Not open to students who have taken Geography 6 or equivalent.

*102. World Regional Geography. (4)

The Staff

Survey of the geographic characteristics of the major world regions.

*105. Economic Geography. (4) Mr. Mason

Prerequisite: Geog. 101 or consent of instructor.

Analysis of the geographic aspects of production, consumption, and exchange.

106. Urban Geography. (4) I. Mr. Kuhn

Historical and contemporary analysis of concepts and problems relating to the distribution, function structure, and regional setting of urban centers.

*107. Introduction to The Urban

Environment. (4)

Mr. Kuhn

Prerequisite: Geography 106, or consent of instructor.

Seminar on the urban environment. Physical, biological and social aspects of urban environmental problems will be considered.

110. Introduction to Meteorology. (4) II.

Mr. Haiman

Prerequisites: Geography 3 or equivalent and courses in basic physics and chemistry recommended.

An introduction to the dynamics of the earth's atmosphere. Considered will be: energy exchange mechanisms, energy balance, condensation and precipitation processes, the dynamics of pressure and wind systems, and the distributions of weather disturbances. The course will include discussions of instrumentation, mapping of synoptic patterns, local weather systems, and methods and consequences of weather modification experiments.

111. Climatology. (4) II.

Mr. Haiman

Prerequisites: Geography 3 and consent of instructor. Characteristics and distributions of climatic phenomena arising from interactions of the atmosphere and the earth's surface; characteristics of climatic classifications.

115A. Geographic Photo Interpretation.

(4) I.

Mr. Estes

Lecture, 3 hours; laboratory, 3 hours. Prerequisite: Geography 3 or consent of instructor.

Interpretation of physical and cultural geographic phenomena as recorded by orbital and aerial sensing systems with emphasis on conventional aerial photography.

115B. Geographic Remote Sensing

Techniques. (4) II.

Mr. Estes

Lecture, 3 hours; laboratory, 3 hours. Prerequisites: Geography 3 or equivalent and Geography 115A, Botany 20 and Geology 2, 2L and consent of instructor.

Interpretation of environmental phenomena recorded by orbital and aerial multispectral sensing systems with emphasis on non-visual and multiband sensing techniques.

* Not to be given 1973-74.

116. Regional Analysis. (4) I. Mr. Mason

Prerequisite: Consent of instructor.

Conceptualization, classification, and process in regional analysis. Analysis of the measurement, prediction, and assessment of environmental systems, including environmental quality, hazards and impact. Systems design and models related to solving applied environmental managerial problems.

117. Geographic Field Techniques.

(4) III.

Mr. Estes

Prerequisites: Geography 3, and consent of instructor.

Introduction to the basic methods of geographic survey and analysis.

118. Introduction to Cartography. (4)

The Staff

Prerequisite: Geography 2 and 3 or consent of instructor.

Survey of methods for graphic representation of patterns on the earth's surface as an essential component of the methodology of professional geography. Cartography is examined as both a research technique and an analytical tool. Discussion includes map projections, map compilation, generalization, symbolization and reproduction, and recent advances in the field.

119. Selected Field Analysis in Geography.

(1) III.

The Staff

Prerequisites: Geography 3 and consent of instructor.

Investigation of a selected geographic area. Conducted during a contiguous four day field trip (area and focus of study variable each time of offering. May be repeated once for credit).

***141. Geography of the Arid Lands. (4)**

Mr. Estes

Prerequisites: Geography 3 or consent of instructor.

Comparative study of the arid-lands habitats, investigating the physical and cultural complexes of the world's arid regions, covering climate, landforms, water, soils, vegetation, population and resources.

144. Cultural Geography of the Sea. (4) II.

Mr. Sanders

Prerequisite: Geography 2, Geography 3 recommended.

Geographic survey of man's interactions with the marine and shore environment.

***145. Resource Ecology of the Marine**

Environment. (4)

The Staff

Prerequisite: Geography 2, Geography 3 recommended.

Ecologic survey of role of the oceans in the planetary environment and the utilization by man of the planet's marine resources.

148. California. (4) I, III.

Mr. Kuhn, Mr. Mason

Intensive study of the physical and cultural processes that have shaped and are shaping the landscapes of California.

150. North America. (4) I.

Mr. Mason

Intensive study of the physical and cultural processes that have shaped and are shaping the landscapes of North America.

***153. Latin America. (4)**

The Staff

Geographic characteristics of the Latin American region.

***154. Australasia and Oceania. (4)**

Mr. Sanders

Characteristics and problems of Australia, New Zealand, Fiji and other developing nations in the Southwest Pacific.

155. Geography of the Soviet Union. (4) II.

Mr. Estes

A systematic regional approach to the study of the physical and cultural phenomena which characterize the Soviet Union.

***160. Environmental Conservation and**

Resource Management. (4)

The Staff

Prerequisite: Geography 3.

Evaluation of environmental resources and appraisal of the economic and related demands placed on such resources. Analysis of global and regional patterns of resource use and exploitation.

161. Man in Nature. (4) I.

Mr. Haiman

Prerequisites: Geography 3A, and consent of instructor.

An analysis of the role of man as a major agent of biological change in the earth's ecosystems. Both historical and contemporary processes will be examined.

162. Environmental Pollution. (4) I, III.

Mr. Sanders

Human contamination of the environment. Includes discussion of air, water, land and space pollution and methods of pollution control. Noise is studied as a form of pollution.

165. Biogeography. (4) III.

Mr. Haiman

Prerequisites: Geography 161 or consent of instructor and courses in Biological Sciences strongly recommended.

Introduction to basic principles of biological geography; biogeographic regions, processes of biotic change over the earth's surface, including analyses of the dominant present-day factors operation to modify biotic units.

195. Selected Problems in Geography. (2-4)

The Staff

Prerequisite: Consent of instructor.

Investigation of selected geographic factors of major significance to human environmental interactions. (Scope and emphasis variable each time offered. May be repeated once for credit.)

198. Readings in Geography. (1-2) I, II, III.

The Staff

Prerequisite: Consent of instructor and Upper Division standing.

Taken with consent of instructor and the Chairman of the department. Designed to provide in-depth directed inquiry into a topic of interest to the student. Maximum of four units may be accumulated.

199. Independent Studies. (1-5) I, II, III, IV.

The Staff

Prerequisite: Upper Division standing with a 3.0

* Not offered 1973-74.

grade point average within the major. Plan for the study must be submitted to, and approved by, the Department Chairman.

Selected research under the direction of a faculty member. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

GEOLOGICAL SCIENCES

Preston Cloud, Ph.D., *Professor of Biogeology.*

John C. Crowell, Ph.D., Sc.D., *Professor of Geology.*

Arthur C. Darrow, M.A., *Lecturer.*

¹Richard V. Fisher, Ph.D., *Professor of Geology.*

Clifford A. Hopson, Ph.D., *Professor of Geology.*

Bruce P. Luyendyk, *Assistant Professor of Marine Geophysics.*

²Keith B. Macdonald, Ph.D., *Assistant Professor of Oceanography.*

James M. Mattinson, *Lecturer.*

Robert M. Norris, Ph.D., *Professor of Geology.*

¹Arthur G. Sylvester, Ph.D., *Associate Professor of Geology.*

George R. Tilton, Ph.D., *Professor of Geochemistry (Chairman of the Department).*

George Tunell, Ph.D., *Professor of Geochemistry, Emeritus.*

³Donald W. Weaver, Ph.D., *Associate Professor of Geology.*

Robert W. Webb, Ph.D., *Professor of Geology (Undergraduate Adviser).*

C. Douglas Woodhouse, LL.M., *Professor of Mineralogy, Emeritus.*

³William S. Wise, Ph.D., *Professor of Geology (Graduate Adviser).*



Thomas W. Dibblee, Jr., *Research Associate in Geology.*

Arne Junger, *Research Associate in Geophysics.*

Parke D. Snavely, *Research Associate in Geology.*

Edmond F. Lawrence, *Research Associate in Geology.*

PREPARATION FOR THE MAJOR

Minimal preparation shall include 30–32 semester hours or 45–48 quarter units of college-level work in biology, chemistry, mathematics, and physics, distributed among these fields as determined to be in the student's best interest in consultation with the Departmental Undergraduate Adviser. *In Biology:* students normally offer Biology 20 or Botany 20. Biology 1A, 1B, 1C is preferred for students interested in biogeology; *in Chemistry and Physics:* a year sequence in both chemistry and physics (with laboratories) appropriate to science majors; *in Mathematics:* at least two courses in the calculus (Math 3B and 3C or equivalent), and additional mathematics, such as Math 4A or Statistics, as appropriate to the student's interest. *In Geological Sciences:* Physical and Historical Geology (Geology 2 and 2L; 3 and 3L, or 195 with consent) and Mineralogy (Geology 25 and 26), or acceptable equivalents. Twenty units of foreign language or acceptable equivalents; Russian, or German, or French is recommended.

THE MAJOR

Geology is the science of the earth—the study of its rocks, minerals, records of ancient life, and of the physical, chemical, and biological processes, past and present, at work in the earth's interior, on its surface, and within its envelope of water and air. Its methods are applicable to studies of the moon and planets. From these, arises a better understanding of our surroundings, as well as knowledge applicable to the solution of many of the pressing environmental problems now confronting mankind. The Department's program leading to the bachelor's degree provides the background in elementary geology, basic sciences, and mathematics necessary to undertake graduate work in geology or closely related fields such as geophysics,

¹ Absent on Leave 1973–74.

² Eligible for Leave 1973–74.

³ Eligible for Leave 1974–75.

geochemistry, biogeology, or oceanography. While providing a basic foundation in geology, the program retains the flexibility to permit preparation for ultimate specialization in related fields. Thus, in close consultation with the undergraduate adviser, each student develops an individual program tailored to his needs and interests.

Requirement for the Major

The College of Letters and Science requires 60 upper division units for graduation. Of these, up to 48 units may be in the major and related fields. Among the recommended Geology courses are 102A–B–C, 103, 104A, 110, 111, 112 or 122, 118, 124, 135, and 195, but other patterns, leading to special emphases in biology, geochemistry, geophysics, oceanography, or special facets of environmental science, are acceptable. Thus, any approved combination of upper division courses in geology, chemistry, mathematics, physics, or biology will complete the major, so long as at least 24 units in geology are included.

DEPARTMENTAL ADVISING

An undergraduate adviser will advise majors and prospective majors and assist in their program planning. A graduate adviser, aided by a guidance committee, assists M.A. and Ph.D. candidates. Prospective students should consult the appropriate adviser before beginning their calendar of studies.

GRADUATE PROGRAM IN GEOLOGICAL SCIENCES

The Department awards the M.A. and Ph.D. degrees in Geology. A candidate for admission, in addition to fulfilling the general requirements of the Graduate Division, must present his score on the verbal and quantitative parts of the Graduate Record Examination and advanced part if applicable. Entering students will confer with the Graduate Adviser and a placement committee to determine a suitable program of study, based on each student's objectives and previous training. The Department encourages students with Bachelor degrees in sciences other than geology to apply for admission. Normally, graduate students admitted will be expected to have satisfied the Department's foreign language requirement for the BA or an acceptable equivalent, or to complete the requirement after admission.

THE DEGREE OF MASTER OF ARTS

Requirements

1. An integrated course of study recommended by a placement committee and the Graduate Adviser.
2. Demonstration of a scientific reading knowledge of any modern foreign language, or the satisfactory completion of a significant and related set of courses (8 units) supplementary to the student's program and normally from the sciences outside the department.
3. Preparation of a satisfactory thesis, or
4. Satisfactory completion of such examination as the student's guidance committee shall prescribe if he follows the examination plan.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. The student must demonstrate the following proficiencies by course work and by departmental qualifying examinations:
 - a. Superior competence in his field of specialization.
 - b. Broad knowledge in the geological sciences, particularly those aspects that relate to his specialization.
 - c. Satisfactory knowledge of sciences other than geology which are germane to his fields of interest.

2. The student must demonstrate, by examination or course work, either:

a. An excellent reading knowledge of one foreign language, generally French, German, or Russian, or he may demonstrate an adequate reading knowledge of two languages other than English, or

b. Competence in a science, mathematics, or in a field of study usually related to but not part of his area of specialization, and normally outside the Department of Geological Sciences.

3. On completion of requirements 1 and 2 above, the candidate pursues a plan of research leading to the doctoral dissertation. Before being formally admitted to candidacy for the doctorate, he must pass a comprehensive oral examination administered by his dissertation committee.

4. The dissertation, prepared in a form suitable for professional publication, must be approved by the committee, and the candidate is required to present its principal conclusions in open forum.

5. Completion of the doctorate must be accomplished within five years after the comprehensive oral examination is passed.

6. Ordinarily a candidate is required to serve as a Teaching Assistant for a minimum of three quarters.

TEACHING CREDENTIALS

Either a major or a minor in geology may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. Detailed information is given in *The Graduate School of Education Announcement*.

GEOLOGICAL SCIENCES

Lower Division Courses

2. General Geology: Physical. (4) I, II, III.

The Staff

Lecture, three hours.

An introduction to the science of the earth; properties and processes of the earth's interior and crust and their interaction with surface processes which modify and shape man's physical environment.

2L. Laboratory, General Geology: Physical.

(1) I, II, III.

Laboratory, three hours. Should be taken concurrently but may follow Geology 2.

Identification of common minerals and rocks. Introduction to topographic and geologic maps, land forms, and geologic structures. Field trips.

3. General Geology: Historical. (3) III.

Mr. Norris

Lecture, three hours. Prerequisite: Geology 2.

Antiquity and history of the earth, its physical changes, and the record of biological evolution.

3L. Laboratory, General Geology: Historical.

(1) III.

Laboratory, three hours. Should be taken concurrently but may follow Geology 3.

Elementary problems in paleontology and stratigraphy.

4. Introduction to Oceanography.

(4) II.

Mr. Macdonald

Lecture, three hours; discussion, one hour.

A broad introduction to oceanography covering the major physical, chemical, biological, and geo-

logical features of the oceans, their role in earth history, and potential use as a natural resource.

25. Crystallography and Crystal Chemistry.

(4) II.

Mr. Wise

Lecture, three hours; laboratory, three hours. Prerequisites: Chemistry 1A and Math 3A (may be taken concurrently).

Introduction to symmetry operations, internal symmetry and crystal structures, crystal chemistry, external crystallography, physical properties, and x-ray crystallography.

26. Minerals. (5) III.

Mr. Wise

Lecture, three hours; laboratory, six hours. Prerequisite: Geology 25.

Properties, origins, associations, and determination of the more important ore and rock-forming minerals.

Upper Division Courses

100A. Frontiers of Earth Science. (4) I.

Mr. Tilton and Mr. Karig

Lecture, three hours; discussion, one hour.

Introduction to earth and planetary science, with emphasis on the origin and composition of the earth, moon, and planets, and the origin of life. Additional topics will include sea floor spreading and continental drift, earthquake seismology, and geochronology. Principally for non-majors.

101. Principles of Geology. (5) I.

The Staff

Lecture, three hours; laboratory, three hours; field trips. (Not open to students who have taken Geology 2.)

Geological principles and processes. Forces at work within the earth and upon its surface that change the physical and biological environments. Geologic time and the inevitability of change.

102A. Petrology of Igneous Rocks. (3) II.

Mr. Hopson

Lecture, two hours. Prerequisite: Geology 26, 104A.

The occurrence, associations, tectonics, and petrogenesis of the common plutonic and volcanic rocks. Introduction to physical chemistry of magma systems; magmatic crystallization and differentiation. Pluton emplacement; volcanic eruption mechanisms. Extensive reading is required.

102AL. Petrography of Igneous Rocks. (3)

II, III.

Mr. Hopson

Seminar, one hour; laboratory, six hours. Prerequisite: Geology 102A, 110. 102A normally taken concurrently.

Identification, classification, and interpretation of igneous rocks, using the petrographic microscope and hand lens.

102B. Sedimentary Petrology. (5) I.

Mr. Fisher

Lecture, two hours; laboratory, six hours; field trips. Prerequisites: Geology 26 and 104A (which may be taken concurrently).

Origin, interpretation and identification of sedimentary rocks.

102C. Petrography of Metamorphic Rocks.

(5) III.

Mr. Hopson

Lecture, two hours; laboratory, six hours. Prerequisite: Geology 26, 110, 102A, 102B, or consent of instructor.

Identification and interpretation of metamorphic rocks utilizing the petrographic microscope and hand lens.

103. Fundamentals of Structural Geology.

(3) II.

Mr. Crowell

Lecture, three hours; field trips. Prerequisite: Geology 104A.

Studies of deformed rocks, folding and faulting, and tectonics of the earth, particularly the crust.

103L. Laboratory, Structural Geology. (2) II.

Mr. Crowell

Laboratory, four hours; field trips. Geology 103 to be taken concurrently.

Descriptive geometry applied to geologic problems, use of stereonet, structure contouring and isopaching, map interpretation, exercises in structural analysis and synthesis.

104A. Field Studies in Geologic Methods.

(5) I.

Mr. Sylvester and Staff

Lecture, one hour; laboratory, three hours; field, eight hours. Prerequisites: Geol. 2, 2L and 3, 3L (or 195), or 101, desirable.

Introduction to the methods of geological observation and interpretation, with an emphasis on understanding earth processes in the field and reconstructing the physical history of the earth; the stratigraphic, petrologic, and structural relations of rocks; methods used in solving problems of the geological environment.

104B. Field Methods. (5) III.

Mr. Norris

Field and laboratory, thirteen hours. Prerequisites: Geology 102B and 103.

Geologic mapping on topographic maps and aerial

photographs; use of geologic field instruments; field techniques; preparation of geologic maps and reports.

105. Marine Geology. (4) I (alt. years).

Mr. Norris

Lecture, three hours; field trips. Prerequisite: Geology 3, or 101, or consent of the instructor.

Geologic processes in the sea; rocks and sediments of the sea bottom and the shoreline.

106. Geological Problems of the Human

Environment. (4) III.

The Staff

Lecture, three hours; field trips. Prerequisite, Env. S. 1 and 5, or Geol. 2 and 3 or equivalent, or consent of instructor.

Problems concerning earthquakes, mineral and energy resources, construction projects (dams, highways, tunnels, etc.) floods, beach erosion, etc. Principles of sound planning for the human use of the solid earth. (This course is the same as Environmental Studies 106).

107. Geology of North America. (4) III.

(alt. years).

Mr. Norris, Mr. Webb

Lecture, three hours; field trips. Prerequisite: Geology 3, or 101, or consent of the instructor.

109. Geology of California. (4) III

(alt. years).

Mr. Norris, Mr. Webb

Lecture, three hours; field trips. Prerequisite: Geology 3, or 101, or consent of the instructor.

110. Optical Mineralogy. (5) I.

Mr. Wise

Lecture, three hours; laboratory, six hours. Prerequisite: Geology 25.

Principles and methods of optical crystallography and optical mineralogy.

111. Concepts of Paleontology. (4) I.

Mr. Macdonald

Lecture, two hours; laboratory, six hours. Prerequisites: Biology 20, or equivalent, and/or consent of instructor.

An introduction to the principles of taxonomy, evolution, and paleontology as exemplified by fossils: Demonstration of these principles through laboratory and field studies.

112. Stratigraphic Paleontology. (4) II

(alt. years).

Mr. Weaver

Lecture, two hours; laboratory, three hours; field trips. Prerequisites: Geology 104B, 111.

Principles of stratigraphic paleontology and the stratigraphic distribution of fossils.

113. Engineering Geology. (3) I.

Mr. Weaver

Lecture, one hour; laboratory, six hours. Prerequisites: Senior standing and consent of instructor.

Application of the principles of geology to civil engineering problems in dam construction, landslides, ground water, building sites, building materials, marine shorelines, petroleum industry, military operations. Course will involve discussion, laboratory, and field problems.

115. History of the Geological Sciences.

(4) On demand.

Mr. Norris

Lecture, three hours; discussion, one hour. Prerequisite: Geology 2.

Historical development and philosophy of the geological sciences with emphasis on the important early workers in the science.

117. Geomorphology. (4) I (alt. years).

Mr. Norris, Mr. Webb

Lecture, three hours; field. Prerequisite: Geology 3, or 101, or consent of instructor.

Evolution of the landscape and relief features of the earth.

118. Summer Field Geology. (12) The Staff

Eight weeks in the field during the summer. Prerequisite: Geology 104A.

Preparation of a geologic map, geologic sections, and a report on a selected region.

119. Field Investigations in Geology. (5-9).

The Staff

Prerequisites: Geology 104A and/or consent of instructor.

Selected field areas are investigated as research problems. Content varies from year to year. (May be taken in lieu of Geology 118, with approval of the Department.)

122. Physical Stratigraphy. (5) III (alt. years).

Mr. Fisher

Lecture, two hours; laboratory, six hours; and field trips. Prerequisite: Geology 102B or consent of instructor.

Principles and processes involved in the development and description of stratified rock accumulations.

124. Geochemistry I. (4) I.

Mr. Tilton, Mr. Wise

Lecture, three hours; discussion, one hour. Prerequisites: Chemistry 1C and any of Geol. 2, 100A, or 101.

Distribution and geochemical classification of the elements. Crystal chemistry. Solubility and chemical equilibrium in solutions. Phase diagrams, crystallization of magmas and metamorphic reactions.

125. Geochemistry II. (4) II.

Mr. Tilton

Lecture, four hours. Prerequisite: Mathematics 3C. Origin, age, and abundance of elements. Evolution of meteorites, the moon, and the earth. Radiometric dating.

126. Experimental Methods in Geochemistry.

(3) III.

Mr. Tilton

Lecture, two hours; laboratory, three hours. Prerequisite: Geology 125.

Use of experimental techniques, including counting of alpha, beta, and gamma radiations applied to problems of geochemical interest.

127. X-Ray Crystallography. (3) On demand.

Mr. Wise

Lecture, two hours; laboratory, three hours. Prerequisite: Geology 110, or consent of the instructor.

Single-crystal x-ray diffraction techniques in the study of internal symmetry, space groups, and structure.

128. Advanced Techniques in Mineralogy.

(4) On demand.

Mr. Wise

Lecture, two hours; laboratory, six hours. Prerequisite: Geology 110.

Theory and practice of advanced techniques and methods in mineralogy: the universal stage microcopy, ore microscopy, and x-ray diffraction.

133. Geologic Data Analysis. (3) On demand.

Lecture, three hours.

Mr. Macdonald

Quantitative data analysis and simple statistics applied to geologic problems. Class stresses non-parametric methods; covers selection of methods appropriate to particular problems, their efficient computation and interpretation.

135. Geophysics. (4) II.

Staff

Lecture, four hours. Prerequisite: Mathematics 4B.

Introduction to geophysical principles and their applications to geological problems.

145. Resources and Man. (4) On demand.

Mr. Cloud

Discussion, three hours. Prerequisite: Consent of instructor.

Considers interactions between man and his resources with emphasis on questions of resource adequacy and environmental quality.

150. Current Topics in Geological Sciences.

(1) On demand.

The Staff

Lecture, one hour.

Discussion and readings on a current topic in geological sciences offered to student groups who desire advanced study of a topic not in the curriculum. Field trips when subject warrants. Course may be repeated, but no more than three units may be applied to the major.

160A-B-C. Seminar in Geology. (1-1-1)

I, II, III.

The Staff

Prerequisite: Junior major in Geology. May be repeated for credit.

Attendance at departmental "Journal Club" (Geol. 260, Seminar in Geology) and brief written evaluations of the three papers which, in the student's judgment, were the best of the quarter.

190. Advanced Studies in Paleontology.

(1-4) I, III.

Mr. Macdonald

Laboratory, three to twelve hours. Prerequisites: Geology 111 and consent of instructor.

Designed to meet the interests and needs of individual students. Selected readings and laboratory work in systematic paleontology; field studies of recent or fossil biotas; animal-substrate relations, biostatistics, etc. Term paper required.

194. Group Studies for Advanced Students.

(1-5) I, II, III.

The Staff

Prerequisites: Upper division standing; consent of the instructor and the Department chairman.

Intensive research or study by a small group of advanced students who share an interest in a topic not included in the regular departmental curriculum. Students may repeat the course; no more than five units will apply to the major.

195. Adventures in Earth History. (5) I.

Mr. Cloud

Discussion and lecture, four hours. Prerequisite: Consent of instructor.

Current and classic problems in the history of the earth from its origin to the present. Designed to integrate and extend the historical aspects of the undergraduate program for science majors and beginning graduate students.

198. Readings in the Geological Sciences.

(2-4) I, II, III. The Staff

Prerequisites: Consent of the instructor and the Chairman.

Critical reviews and discussions of selected geological subjects. May be taken more than once at the option of the student; not more than four units may be included in the minimum requirements for the major.

199. Independent Studies in Geology. (1-5)

I, II, III. The Staff

Prerequisite: senior standing with a 3.0 grade-point average within the major, or by special permission. Petition required.

Selected research under the direction of a faculty member. 199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses**201A. Graduate Field Seminar. (3) I.**

The Staff

Three field problems, each followed by a written report. (Required of entering graduate students.)

201B. Graduate Field Seminar. (3) III.

The Staff

Three field problems, each followed by a written report. (Required of all graduate students in the academic year in which 201A is completed.)

204. Geology of Fluids and Flow.

(3) II (alt. years). Mr. Fisher

Lecture, three hours. Prerequisite: Consent of instructor.

Characteristics of fluids—air, water, gases, lava, magma. Dispersal mechanisms of wind, stream, mud flow, turbidity current, pyroclastic flow and lava flow. Fluidization and diatremes. Flowage differentiation and crystal settling in silicate fluids.

206. Volcaniclastic Rocks and Sediments.

(3) II (alt. years). Mr. Fisher

Lecture, one hour; laboratory, six hours. Prerequisite: Consent of instructor.

Genesis and description of volcaniclastic rocks—pyroclastic, hyaloclastic and epiclastic. Dispersal and depositional mechanisms, including subaerial and submarine varieties.

210. Paleoecology: Principles and**Approaches. (4) III (alt. years).**

Mr. Macdonald

Discussion, three hours. Prerequisite: Consent of instructor.

Application of paleontologic, sedimentologic, and geochemical approaches to the interpretation of ancient environments and the solution of paleobiological problems. Laboratory, field, or library research leading to a term paper.

212. Seminar in Stratigraphy and**Paleontology. (2) II or III.** Mr. Weaver

Discussion, two hours. Prerequisites: Geology 111, 112.

A review and discussion of selected current and classic works in the field of stratigraphy and paleontology.

214. Seminar: Problems in Marine Science.

(4) III (alt. years). Mr. Macdonald

Discussion, three hours. Prerequisite: Consent of instructor.

A critical review of research on selected topics in marine science. Subject matter will change from year to year; typical themes will include: (1) estuaries and coastal lagoons; (2) coral reefs past and present; (3) continental shelves; (4) recent sedimentary environments; (5) oceanography of shallow seas.

218. Micropaleontology. (4) II. Mr. Weaver

Lecture, two hours; laboratory, six hours. Prerequisites: Geology 111, 112.

220. Biogeology. (4) III.

Mr. Cloud

Lecture, one to three hours; laboratory, zero to four hours, as appropriate to course content. Prerequisite: Consent of instructor. Students with biological, geological, and chemical backgrounds encouraged.

Selected subjects related to the evolution of the primitive earth and to environmental and paleo-microbiological processes and events in geology.

221. Seminar in Petrofabrics. (4) II

(alt. years).

Mr. Sylvester

Lecture, two hours; laboratory, six hours. Prerequisite: Geology 103 and 110, or consent of instructor.

Consideration of theoretical, experimental, and empirical aspects of microscopic analysis of metamorphic tectonites.

223. Seminar in Petrology. (4) III.

Mr. Hopson

Discussion, three hours. Prerequisites: 102A, 102C. Selected topics in igneous and metamorphic petrology.

224. Advanced Metamorphic Petrology. (4)

I (alt. years).

Mr. Hopson

Lecture, three hours and field trips. Prerequisite: Geology 102C or consent of the instructor. The study of metamorphic rocks and their origins, with emphasis on their petrography, physical chemistry, and field relations.

225. Advanced Igneous Petrology. (4)

I (alt. years).

Mr. Hopson

Lecture, two hours; laboratory, six hours. Prerequisite: Geology 102A.

The study of igneous rocks and their origins, with emphasis on their petrography, physical chemistry, and field relations.

226. Thermodynamics and Petrologic**Applications. (4) I (alt. years).** Mr. Wise

Lecture, three hours; laboratory, one hour. Prerequisite: A course in physical chemistry.

Derivation of first, second, and third laws thermodynamics. Application of free energy, entropy, and heat capacity calculations to petrologic problems.

227. Mineral Paragenesis. (2) I (alt. years).

Mr. Wise

Lecture, two hours. Prerequisite: Geology 128, or consent of instructor.

Application of mineral data, such as composition and structural state, to rock origins.

227L. Laboratory, Mineral Paragenesis.

(2) I (alt. years). Mr. Wise
Laboratory, six hours. Geology 227 to be taken concurrently.

Practical application of mineral data, such as composition and structural state, to rock origins.

228. Isotope Geology. (3) III. Mr. Tilton

Lecture, three hours. Prerequisite: Geology 125.
Methods of age determination including dating of igneous rocks and sediments. Interpretation of discordant lead ages. Use of lead and strontium as natural tracers. Light stable isotopes, with emphasis on oxygen.

229. Analytical Techniques in Mineralogy.

(3-4) I. Mr. Wise
Prerequisite: Permission of instructor.

Course content variable, but may cover electron probe microanalysis, x-ray spectrographic analysis, atomic absorption spectrometry or classical chemical analytical methods. May be repeated for credit.

230. Field Studies in Tectonics. (4) I

(alt. years). Mr. Crowell
Seminar, discussion, and field trips. Prerequisite: Geology 201A or consent of instructor.
Advanced seminar on a local tectonic problem.

231. Structural Analysis of Deformed Rocks.

(3) On demand. Mr. Sylvester
Lecture, three hours, and field trips. Prerequisite: Geology 103 or equivalent.

Review of selected classical and current works dealing with geometrical and statistical analysis of tectonites on the macroscopic and megascopic scales. Computer analysis of field measurement data.

235. Marine Tectonics. (3) I (alt. years).

Staff
Discussion, three hours. Prerequisite: Geology 135.

The study of geophysical evidence relating to the structure of the earth's crust and upper mantle beneath the oceans; geophysical investigations of the continental shelf and ocean basins.

236. Physical Geology of California. (3)

On demand. Mr. Webb
Discussion, three hours. Prerequisite: Geology 201A or consent of instructor.
Problems in physical geology of California; seminar.

247. Seminar in Quaternary Geology.

(3) On demand. Mr. Norris
Discussion, three hours. Prerequisite: Geology 117 or consent of instructor.

249. Seminar in Structure and Tectonics.

(4) I (alt. years). Mr. Crowell
Discussion, three hours; field trips. Prerequisite: Geology 201A or consent of instructor.
Topical structural geology and tectonics.

250. Contemporary Issues in Earth and Planetary History. (2-6) On demand.

Mr. Cloud
Discussion, one to five hours, as appropriate to content. Prerequisites: A year of graduate work and consent of instructor.

Seminar discussion of topics to be selected for their timeliness and interest to students.

260. Seminar in Geology. (1) I, II, III.

The Staff
Two hours per week. (Required of all graduate students.)

Presentation and discussion of current research, and reviews of the literature on selected geologic concepts. May be repeated for credit.

270. Seminar in Geologic Problems.

(1-3) I, II, III. The Staff
Discussion, three to nine hours. Prerequisite: Graduate standing.

Review and discussion of a current problem in geology. Content is variable and depends on student interest.

280. Seminar in Field Geology. (0-4)

I, II, III. The Staff
Field trips of one day or more, organized as opportune. Appropriate report required for each trip. Credit is one-half unit per day in the field, with a maximum of one unit for any trip. May be repeated for a maximum of 8 units each academic year. S/U grading.

596. Directed Reading and Research.

(2-6) I, II, III. The Staff
Prerequisites: Consent of instructor and Graduate Adviser.

Individual tutorial. Written proposal for each tutorial must be approved by the instructor and the department chairman, and filed with the Graduate Division. No more than half the units necessary for the master's degree may be taken in 596.

597. Individual Study for Ph.D. Examinations.

(1-12) I, II, III. The Staff
Prerequisites: Consent of instructor and Graduate Adviser.

Instructor should be student's major professor or chairman of his committee. No unit credit allowed toward advanced degree.

598. Master's Thesis Research and Preparation. (1-6) I, II, III.

The Staff
Prerequisites: Consent of the instructor and Graduate Adviser.

Instructor should be chairman of the student's thesis committee. Maximum of 12 units total. No unit credit allowed toward master's degree.

599. Ph.D., Dissertation Preparation.

(1-6) I, II, III. The Staff
Prerequisites: Consent of instructor and Graduate Adviser. Maximum of 12 units total.

Limited to terminal preparation. Instructor should be chairman of the student's doctoral committee.

GERMANIC AND SLAVIC LANGUAGES AND LITERATURES

Stuart P. Atkins, Ph.D., *Professor of German.*

Richard C. Exner, Ph.D., *Professor of German.*

Rolf N. Linn, Ph.D., *Professor of German.*

Harry Steinhauer, Ph.D., *Professor of German, Emeritus.*

John T. Waterman, Ph.D., *Professor of German (Chairman of the Department).*

Gunther H. Gottschalk, Ph.D., *Associate Professor of German.*

Donald B. Johnson, Ph.D., *Associate Professor of Russian.*

¹Albert Kaspin, Ph.D., *Associate Professor of Russian.*

Ursula R. Mahlendorf, Ph.D., *Associate Professor of German.*

²L. Carl Moody, Ph.D., *Assistant Professor of Russian.*

¹Frank Tobin, Ph.D., *Assistant Professor of German.*

Torborg L. Lundell, Ph.D., *Assistant Professor of Swedish.*



Clifford A. Barraclough, M.A., *Lecturer in German.*

William F. Holtrop, Ed.D., *Lecturer in German and Dutch, Emeritus.*

Roselinde Konrad, *Lecturer in German.*

Mstislav Kostruba, M.A., *Lecturer in Russian.*

The Department reserves the right to place students in courses from which they can best profit. Students who possess a native command of a foreign language will not be permitted to enroll in lower division courses of that language.

A student who receives a D grade in elementary language courses (2–5) is strongly advised not to proceed to the next course. He should either repeat the course for no credit and obtain at least a C grade or engage a tutor to prepare him for the next course.

Students who have completed a more advanced course in a sequential series, e.g., German or Russian 1, 2, 3, 4, 5, 6 will not be permitted to take a course that is lower in the series. Students will not be permitted to take two courses of a sequential series concurrently.

THE MAJOR IN GERMANIC LANGUAGES AND LITERATURES

Preparation for the Major—Courses 1, 2, 3, 4, 5, or four years of high school German subject to validation by passing the departmental test given at the beginning of each quarter, and course 6, or German 14, or equivalent to be tested by examination. All German majors must take German 32 and History 4AB. Philosophy 20A–B–C is strongly recommended.

Students who wish to make German their major subject must have maintained an average grade of at least C in the college courses in German taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Requirements for the Major—The German major consists of forty upper division units. These must include German 101A–B (or 110A–B for native speakers), 120 and 115A–B–C (or equivalents. An “equivalent” course—other than a survey course taken elsewhere—is any one of the literature courses that covers approximately the same material as any one quarter of the survey course.); the remaining sixteen units should be divided among upper division courses.

An undergraduate major in German may enroll for credit in one quarter of any German literature-in-translation course.

Native speakers of German should substitute German 110A–B for German 101A–B.

The major in German who goes to Göttingen under the EAP program is expected to do

¹ Sabbatical Leave Spring 1974.

² Sabbatical Leave in Residence Fall 1973, Winter 1974.

12 units beyond the required course 101A-B (GC 106A-B-C) of the forty required for the major on this campus, either before or after his year abroad.*

All Göttingen Center literature courses are acceptable for the major in German, including GC 134, German Folklore.

There is a basic limit on the amount of unit credit for language courses. This is sixteen, the unit value of language courses offered at UCSB. Hence, a student may take our 16 unit language courses (101AB and 110AB) and then receive no credit for the language portion (8 units) of the required intensive program at the Göttingen study center. A student may have taken 101AB for 8 units; he would then receive 8 more units at Göttingen for the language portion of the intensive course and could thus fulfill his requirement of language courses for the UCSB major.

The remaining four units of the 12-unit intensive program consist of an upper-division literature course (GC 103), which can be applied to the literature portion of the requirements for the major. Thus the student who has completed German 101AB at UCSB will receive full credit toward the major for the intensive language program at Göttingen.

THE MAJOR IN SLAVIC LANGUAGES AND LITERATURES

Preparation for the Major—Courses 1, 2, 3, 4, 5, or 4 years of high school Russian subject to validation by passing the departmental test given at the beginning of each quarter, and course 6, or other equivalent to be tested by examination. A student may enroll in upper division courses after he has passed Russian 6 with grade B or better.

Students who wish to make Russian their major subject must have maintained an average grade of at least C in the college courses in Russian taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Russian 8ABC is required for the major in Russian.

Requirements for the Major—The Russian major consists of forty upper division units. Of these, twelve must come from courses 101A-B-C or 104A-B-C; at least eight from 108A-B-C, of which 108A is obligatory; four from 121, 122 or 123 (each of these courses may be repeated once as the course content changes from one offering to the next); the remaining sixteen units should be divided among upper division courses. Both Russian 101A-B-C and 104A-B-C are strongly recommended.

In the literature-in-translation courses, Russian majors will be required to read a significant portion of the material in the original.

Russian majors are urged to take History 135ABC.

The major in Russian who pursues part of his studies in the Soviet Union is expected to do 12 units beyond the required course 101ABC of the forty required for the major on this campus, either before or after his stay abroad.

THE DEGREE OF MASTER OF ARTS IN GERMANIC LANGUAGES AND LITERATURES

In addition to fulfilling the general requirements for admission to graduate status, the following departmental requirements apply:

1. All applicants for admission to our graduate program must take the Advanced German Test administered by the Educational Testing Service. The location of testing centers and dates when this test is offered may be determined by writing to Graduate Record Examinations, Educational Testing Service, Box 955, Princeton, New Jersey 08540. Results of the test must be available to us before a student's application can be considered complete.

2. The student must have an undergraduate major in German or its equivalent. Candidates who are deficient in this respect will take the necessary undergraduate courses to make up the deficiency before or concurrent with beginning work in the master's program.

3. The Department offers the M.A. degree under Plan II (without thesis) only. Candidates

* See also the senior residence requirement.

for the M.A. may prepare themselves for one of two types of qualifying examination (all other requirements are the same for all candidates):

Type A, primarily designed for those who plan to go directly into teaching at the high school or junior college level, consists of one 3-hour written examination intended to test the candidate's command of factual information. The candidate is also required to prepare and deliver two oral presentations: a) an analysis appropriate to a high school class of a literary selection; b) an analysis appropriate to a high school class of a feature of language structure. The candidate is given 48 hours in which to prepare the oral presentations, each one of which is to be no less than 30 minutes and no longer than one hour in length.

Type B is designed for those students who plan to go on for the doctorate. The student may not take more than 12 units of undergraduate work. The 4-hour written examination is primarily intended to demonstrate the student's ability to interpret literature in a professional manner. He should also be able to exhibit a reasonably good command of research methods and procedures. This examination may be followed by a 1-hour oral examination.

If a graduate student, after earning his M.A. degree by fulfilling the Type A requirements, should later decide to work toward the doctorate, he will be obliged to take again the Advanced German Test administered by the Educational Testing Service and to achieve a score satisfactory to the Department.

4. To satisfy the foreign language requirement for the M.A. the student must complete, after admission to the Graduate Division, one upper division literature course (in which the readings are substantially in the foreign language) with a grade of B or better, or attain an ETS score of at least 550 in the language.

Courses taken to fulfill a foreign language requirement, or taken in preparation for absolving a foreign language requirement, will not be counted as part of a graduate student's academic course load.

5. One 4-unit course in another department may, with the approval of the Graduate Adviser, be counted toward the degree if it has relevance to the student's special program.

6. The course in bibliography and methods of criticism must be taken by all students. It is a prerequisite for admission to a seminar in German.

7. The course in the history of the German language (German 220AB) must be taken by all students.

8. Students who have had no Middle High German are strongly advised to take German 121, a prerequisite for graduate work in this field.

9. Every student must teach a minimum of two classes in elementary German under supervision at some time before taking the M.A. degree.

THE DEGREE OF DOCTOR OF PHILOSOPHY IN GERMANIC LANGUAGES AND LITERATURES

In addition to fulfilling the general requirements for admission to graduate status, the applicant must satisfy the following departmental requirements:

1. All applicants for admission to our graduate program must take the Advanced German Test administered by the Educational Testing Service. The location of testing centers and dates when this test is offered may be determined by writing to Graduate Record Examinations, Educational Testing Service, Box 955, Princeton, New Jersey 08540. Results of the test must be available to us before a student's application can be considered complete.

2. The student will follow a course of study leading to the M.A. degree but may not take more than 12 units of undergraduate work.

3. To satisfy the foreign language requirement for the Ph.D. the student must complete, after admission to the Graduate Division, one upper division literature course (in which the readings are substantially in the foreign language) with a grade of B or better, or attain an ETS score of at least 550 in the language. The student may substitute for the second foreign language a departmental examination based upon a reading list of world classics or complete course 3 of the regular sequence of a second foreign language (or two quarters of an inten-

sive course) with a grade of B or better, or place into course 4 on the language placement examination.

Courses taken to fulfill a foreign language requirement, or taken in preparation for absolving the foreign language requirement, will not be counted as part of a graduate student's academic course load.

4. After the satisfactory completion of the M.A. equivalent, the student will be advised from quarter to quarter which courses, in his adviser's opinion, are necessary in order for him to be properly prepared for the doctoral qualifying examinations.

5. The qualifying examination, which admits the student to candidacy, will consist of three written examinations, followed by an oral examination. The candidate will write: a) one 4-hour examination on his knowledge of German philology and older German literature (from the beginnings to 1624), including the history of the German Language and a substantive knowledge of either Gothic or Old High German; b) two 4-hour examinations on his knowledge of major works and movements in German literature after 1624. The examination in German philology and older literature (a) will be scheduled one month prior to the two examinations dealing with post-1624 literature (b).

6. Upon passing the qualifying examination, the student will be advanced to candidacy. He will then write a dissertation which he must defend in an oral examination.

7. Every student must teach a minimum of three classes in elementary or intermediate German under supervision at some time before taking the Ph.D. degree.

TEACHING CREDENTIALS IN GERMAN, RUSSIAN

Students wishing to satisfy a major or minor for teaching credential purposes should consult the Announcement of the Graduate School of Education.

GERMAN

****Lower Division Courses**

****** Students wishing to study German may now choose between German 1, 2, 3, 4, 5, 6, and the course German 14.

German 1, 2, 3, 4, 5, 6—All students progress at the same rate of speed and cover the same amount of material. At the end of the quarter all students who pass receive 4 units of credit. Mastery of each instructional unit is encouraged but not required before the student proceeds to the next. The final grades for the quarter will be the traditional range of A through F. Class and laboratory attendance are required. The instructor is primarily responsible for directing student learning. Tests are given to all students during regular classes at fixed times.

German 14—Each student progresses at his own rate of speed and covers differing amounts of material. At the end of the quarter each student receives the units of credit he has earned (from an expected minimum of 1 to a theoretical maximum of 24). Mastery of each instructional unit is required before the student proceeds to the next. The final grade for the quarter will normally be A or B for all students. Class and laboratory attendance are optional. The student is primarily responsible for directing his own learning (he receives suggested study procedures, and individual guidance when needed). Tests are given outside regular class hours to each student when he is ready.

1. Elementary German. (4) I, II, III. The Staff
Beginner's course.

1G. Reading Course for Graduate Students.
(0) I, II. The Staff
Essentials of German grammar and reading of

simple texts in preparation for ETS German examination or other graduate language examinations.

2. Elementary German. (4) I, II, III. The Staff
(Continuation of 1.)

2G. Reading Course for Graduate Students.
(0) II, III. The Staff

Continuation of 1G. Grammar review; reading of intermediate texts; individual help with specialized readings in student's field of study. The purpose of the course is to prepare students for ETS German examination or other graduate language examination.

3. Elementary German. (4) I, II, III. The Staff
(Continuation of 2.)

4. Intermediate German. (4) I, II, III.
(Continuation of 3.) The Staff

Reading for comprehension of short literary texts; speaking and some writing based on these texts; systematic review of grammar.

5. Intermediate German. (4) I, II, III.
(Continuation of 4.) The Staff

6. Introduction to the Study of Literature.
(4) I, II, III. The Staff

Highly recommended for those whose major interest is in literature. Interpretation of basic texts of the major genres. Those students who are primarily interested in language should enroll for the last 4 units of German 14.

8A-B-C. German Conversation. (2-2-2)
A I; B II; C III. The Staff
Prerequisite: German 3 or equivalent prerequisite

to A, German 4 or 8A prerequisite to B, German 5 or 8B prerequisite to C.

Conversation course conducted entirely in German. Meets two hours per week.

14. Individualized Instruction. (1-24)

I, II, III. The Staff

Equivalent to elementary and intermediate courses 1-6. Course consists of 24 sequential instructional units. Successful completion of each unit earns the student one unit of credit and permits him to continue if he so wishes, to the following unit. Each student progresses at his own rate of speed. Units of credit and grades are calculated on the basis of instruction units completed.

32. Germany Today. (4) II. Mr. Exner

Miss Mahlendorf, Mr. Tobin

What is German? People, attitudes, and daily life. Concerns of German intellectuals. Present concerns of the post-1945 generation.

Upper Division Courses

101A-B. Advanced Composition and

Conversation. (4-4) A I, II; B II, III:

A is prerequisite to B. The Staff

102A-B-C. Advanced German

Conversation. (2-2-2) The Staff

Prerequisite: German 6 or equivalent.

Does not count toward 40 unit German major.

*107. Contrastive Structures and Phonetics.

(4) Mr. Gottschalk, Mr. Waterman

*110A-B. Stylistics. (4-4) A I, B II.

Mr. Gottschalk, Mrs. Konrad

A is prerequisite to B.

115A-B-C. Survey of German Literature.

(4-4-4) A I, B II, C III.

Prerequisite: German 6. Students should take 115A-B-C concurrently with 101A-B.

A: Literature from the High Middle Ages through Storm and Stress, Miss Mahlendorf, Mr. Tobin; B: Classicism and Romanticism, Mr. Atkins, Mr. Gottschalk, Mr. Linn; C: Büchner to Brecht, Mr. Exner, Mr. Linn, Mr. Tobin, Miss Mahlendorf.

120. History of the German Language.

(4) III. Mr. Gottschalk, Mr. Waterman

*121. Middle High German Literature.

(4) II. Mr. Tobin

126. Lessing and the Enlightenment. (4) III.

Mr. Atkins, Mr. Linn

*127A-B. Goethe. (4-4) A I.

Mr. Atkins, Mr. Linn

A (or 115B) is prerequisite to B.

Major works, excluding *Faust*.

128. Goethe's *Faust*. (4) I.

Mr. Atkins, Mr. Exner, Miss Mahlendorf

130. Schiller. (4) II. Mr. Linn, Mr. Atkins

142. The Novella: Early Nineteenth Century.

(4) II. Mr. Exner, Mr. Linn, Mr. Tobin

Shorter prose works by authors born prior to 1800.

*144. The Novella: Late Nineteenth Century.

(4) I. Mr. Exner, Mr. Linn, Mr. Tobin

Shorter prose works by authors born after 1800.

*146. Nineteenth Century Lyrics. (4) III.

Mr. Atkins, Mr. Exner

Major poets and poetic movements after Goethe's death and Romanticism. Poets of the "Young Germany" movement, of Poetic Realism and Naturalism. Attention to questions of prosody.

*148. Nineteenth Century Drama (Kleist to

Hauptmann). (4) II. Mr. Linn, Mr. Tobin

The German drama from Kleist to Hauptmann.

*151. Twentieth Century Prose. (4) II.

Mr. Exner, Miss Mahlendorf

Beginning with Expressionism, studies of the development of German prose in our century. Particular emphasis on the last two decades.

*153. Studies in Twentieth Century German Literature. (4-20)

Mr. Exner, Miss Mahlendorf

One or more major figures will be studied in each quarter: A) Mann, B) Rilke, C) Kafka, D) Brecht, E) Hofmannsthal. May be repeated.

*155. Twentieth Century Drama (Post

Naturalism). (4) III.

Mr. Linn, Miss Mahlendorf

Theory, characteristics, and practices of Expressionist drama, epic theater, theater of the absurd, theater of cruelty and post-epic theater. The dramatic work of such authors as the following will be discussed: Wedekind, Kaiser, Sternheim, Toller, Brecht, Dürrenmatt, Frisch, Weiss, Grass.

157. Twentieth Century Lyrics

(Expressionism and Modern). (4) III.

Mr. Atkins, Mr. Exner, Miss Mahlendorf

Major developments in lyric poetry, beginning with Expressionism; emphasis on post-World War II poets and their work.

198. Readings in German. (1-2) I, II, III.

The Staff

199. Independent Studies in German.

(1-5) I, II, III. The Staff

199 Courses are limited to 5 units in one quarter and 12 units total.

Graduate Courses

German 201A is a prerequisite for all seminars and should therefore be taken during the first year of graduate studies.

201A-B. Bibliography and Methods of Criticism. (2-2) A I.

Mr. Atkins

* Not to be given 1973-74.

***202A-B. Gothic. (4-4) A I, B II.**

Mr. Waterman

***203A-B. Middle High German Literature. (4-4) A I, B II.**

Mr. Tobin

Prerequisite: German 121A or equivalent.

May be repeated for a maximum of 16 units credit.

***204A-B. Old High German. (4-4) A I, B II.**

Mr. Waterman

***207. Renaissance and Reformation. (4) III.**

Mr. Atkins

***208. Seminar on Seventeenth Century Literature. (4) II**

The Staff

***209. Seminar on Literature of the Enlightenment. (4) III.**

The Staff

***215. Seminar in Old High German. (4) III.**

Mr. Waterman

Prerequisite: 204AB.

Intensive study of a major Old High German document; introduction to paleography; preparation of critical editions; dialectology and lexicography.

220A-B. History of the German Language.

(4-4) A I, B II.

Mr. Waterman

***222. Seminar in Germanic Linguistics.**

(4) III.

Mr. Waterman

225. Seminar in the History of German

Grammar, (4) III.

Mr. Waterman

***226. Studies in the Age of Goethe. (4-20)**

Mr. Atkins, Mr. Linn

Studies with special emphasis on one of the following: A. Sturm und Drang, B. Kleist, C. Hölderlin, D. the Schlegels, E. the romantic novel.

227A-B. Goethe. (4-4) A II, B III.

A. graduate course, B. seminar.

***228. Schiller. (4) II.**

Mr. Linn

***229. Seminar on Schiller. (4) III.**

Mr. Linn

***230A-B. The Romantic Movement.**

(4-4) A I, B II.

Mr. Atkins, Mr. Linn

***231. Seminar on Romanticism. (4) III.**

Mr. Atkins, Mr. Exner

***232. Studies in Nineteenth Century Literature and Thought. (4-36)**

Mr. Exner, Mr. Linn

Studies in nineteenth century literature and thought with special emphasis on one of the following major writers: A) Heine, B) Büchner, C) Stifter, D) Hebbel, E) Grillparzer, F) Keller, G) Meyer, H) Raabe, I) Fontane, J) Nietzsche, K) Schopenhauer. May be repeated for a maximum of 36 units.

* Not to be given 1973-74.

***235. Studies in Twentieth Century**

Literature. (4-36) H II.

Mr. Exner

Mr. Gottschalk, Miss Mahlendorf

Studies in twentieth century literature with special emphasis on one of the following major writers: A. Hauptmann, B. Mann, C. Rilke, D. Hofmannsthal, E. Kafka, F. Brecht, G. Benn, H. Expressionism, I. Hofmannsthal and the tragic. May be repeated for a maximum of 36 units.

236. Contemporary Literature. (4) I.

Mr. Exner, Miss Mahlendorf

Graduate seminar in literature after the second World War.

240. Studies in the Main Literary Genres.

(4-24) G I.

Mr. Linn, Mr. Exner,

Miss Mahlendorf

Studies in the main literary genres: A. Lyric, B. Drama, C. Novella, D. Novel, E. Essay, F. Tragedy and the tragic element, G. Comedy.

596AA-596ZZ. Directed Reading and

Research. (1-18) I, II, III.

The Staff

Individual tutorial. A written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade. Minimum of two units per quarter. No more than half the units necessary for the master's degree may be taken in 596.

599AA-599ZZ. Dissertation Preparation.

(1-12) I, II, III.

The Staff

Only for preparation of the dissertation. Instructor should be the chairman of the student's doctoral committee. S/U grade. Maximum of 12 units total.

Related Courses in Other Departments**Education SG390. Curriculum, Instructional Procedures and Materials Used in the Teaching of German. (3-5) I.**

Mrs. Konrad

Teaching German language and literature on the high school and college levels. Presentation and content of linguistic and literary courses. A professional course in methods.

Education SG392. Student Teaching:

German. (3-6) I, II, III.

Mrs. Konrad

Required of candidates for a teaching credential with a major or minor in German S/U grading. May be repeated.

Education SG393. Problems Seminar:

Teaching German. (1) I, II, III.

Mrs. Konrad

RUSSIAN**Lower Division Courses****1. Elementary Russian. (4) I.**

Mr. Kostruba

Beginner's course.

2. Elementary Russian. (4) II. Mr. Kostruba
(Continuation of 1.)

3. Elementary Russian. (4) III. Mr. Kostruba
(Continuation of 2.)

4. Intermediate Russian. (4) I. Mr. Kostruba
(Continuation of 3.)

5. Intermediate Russian. (4) II. Mr. Kostruba
(Continuation of 4.)

6. Intermediate Russian. (4) III. Mr. Kostruba
(Continuation of 5.)

8A-B-C. Conversation and Composition.
(2-2-2) A I, B II, C III. Mr. Kostruba
Prerequisites: Russian 1 and 2.

Practice in speaking and writing Russian. Conversation, discussion and composition on assigned topics. To be taken concurrently with Russian 3, 4, 5 or 6.

***11A-B. Russian for Graduate Students.**
(4-4). The Staff

32. Russia Today. (4) III. Mr. Moody
Prerequisite: None.
Introductory survey with emphasis on current scene. Topics: intellectual dissent, ethnic minorities, popular culture, national character, etc. Lectures and readings in English.

Upper Division Courses

101A-B-C. Advanced Russian: Third Year.
(4-4-4) A I, B II, C III. Mr. Johnson
Prerequisite: Russian 6 or consent of instructor.
Introduction to extensive reading of Russian prose with discussion and composition in Russian.

104A-B-C. Advanced Russian: Fourth Year.
(4-4-4) A I, B II, C III. Mr. Kaspin
Prerequisite: Russian 101C or consent of instructor.
Extensive reading of Russian prose and poetry with discussion and composition in Russian.

108A. The Russian Language: Phonetics and Phonemics. (4) I. Mr. Johnson

108B. The Russian Language: Morphology. (4) II. Mr. Johnson

***108C. The Russian Language: History of the Language. (4) I.** Mr. Johnson

115A-B. Survey of Russian Literature.
(4-4) A I, B II. Mr. Kaspin, Mr. Moody

***120. Russian Drama. (4) III.** Mr. Kaspin

***121. The Russian Short Story. (4) II.** Mr. Moody

Prerequisite: Russian 6 or consent of instructor.
Analysis and discussion of various forms of the short story by Russian writers. May be repeated for 8 units total.

* Not to be given 1973-74.

***122. The Novella. (4)** The Staff
Prerequisite: Russian 6 or consent of instructor.
May be repeated for 8 units total.

***123. Russian Poetry of the Nineteenth Century. (4)** The Staff
Prerequisite: Russian 6 or consent of instructor.
A study of representative works of the major nineteenth century poets, with attention to the techniques of Russian prosody. Readings in Russian. May be repeated for 8 units total.

125. Twentieth Century Russian Literature. (4) I. Mr. Moody

***130. Dostoevsky. (4) II.** Mr. Kaspin
A study of Dostoevsky's principal novels and short stories in their historical and cultural contexts. Lectures and readings in English.

***131. Tolstoy. (4) III.** Mr. Kaspin
A study of Tolstoy's principal works in their historical and cultural contexts. Lectures and readings are in English.

132. Solzhenitsyn. (4) III. Mr. Moody
A study of the work of the 1970 Nobel Prize winner for Literature. Lectures and readings in English.

***133. Chekhov. (4) II.** Mr. Kaspin
Short stories and plays. Lectures and readings in English.

134. Nabokov. (4) III. Mr. Johnson
A study of Nabokov's principal writings with particular attention to their Russian background. Lectures and readings in English.

***140. Problems in Translation. (4) I.** Mr. Kaspin
Prerequisite: Russian 6 or consent of instructor.
Techniques of translating literary Russian texts into English.

150. Russian Folk Literature. (4) II. Mr. Kaspin
The myths, epics, folk tales, folk lyrics, and other oral forms. Lectures and readings in English.

199. Independent Studies in Russian. (1-5) The Staff
199 Courses are limited to 5 units in one quarter and 12 units total.

FOREIGN LITERATURES IN ENGLISH TRANSLATION

(Literature courses for which no knowledge of a foreign language is required.)

German (An undergraduate major in German may enroll for credit in *one quarter* of any German literature-in-translation course.)

139A-B-C. German Literature in Translation. (4-4-4) A I, B II, C III.

Mr. Linn, Miss Mahlendorf, Mr. Tobin

Studies in the major movements from the eighteenth century to today, with special emphasis on authors such as Goethe, Schiller, Kleist, Mann, Kafka, Brecht, Hesse, Grass.

*141. German Literature of the Twentieth Century in English Translation. (4)

Summers only.

The Staff

*149. The Faust Tradition. (4) II.

Mr. Atkins, Mr. Exner, Mr. Gottschalk,
Mr. Linn, Miss Mahlendorf

The Faust legend in literature. Emphasis on the Chapbook, Marlowe, Goethe, and Thomas Mann.

159. Great German Writers. (4) I (Topic: Hesse); III (Topic: Kleist & Büchner).

Mr. Atkins, Mr. Exner, Mr. Gottschalk
Miss Mahlendorf, Mr. Tobin

One or more major figure will be studied in each quarter from the following: A. Hesse, B. Böll, C. Kleist & Büchner, D. Goethe, E. Thomas Mann, F. Kafka. May be repeated for a maximum of 12 units.

160. Proseminar on Great German Writers.

(4) II (Hesse).

Mr. Gottschalk

Prerequisite: German 159 with a grade of B or better or consent of instructor.

Seminar on authors and topics covered in preceding lecture course on German literature in translation.

*169A-B. The Living German Theater. (4-4)

Mr. Exner, Mr. Linn, Miss Mahlendorf,
Mr. Tobin

The German theater today: plays, playwrights, and theatrical movements from the 19th century to Post World War II.

*187. Strauss and Hofmannsthal. (4) I.

Mr. Exner and Mrs. Hsu

Prerequisite: None.

The collaboration between composer and poet. A study of their correspondence and of the operas, with special emphasis on *Electra*, *Rosenkavalier*, and *Ariadne*. An interdisciplinary study. Same course as Music 187.

*192. Truth and Fiction: A Century of German Literature in History. (4) II.

Mr. Exner and Mr. Remak

Prerequisites: Upper division course in German literature or History 128, and consent of either instructor.

German history, 1870-1971, as reflected in German literature. This course is the same as History 192.

Russian

115A-B. Survey of Russian Literature.

(4-4) A I, B II. Mr. Kaspin, Mr. Moody

Reading and discussion in English of representa-

tive novels and short stories of Pushkin, Lermontov, Gogol, Turgenev, Goncharov, Dostoevsky, Tolstoi, Chekhov and others.

*120. Russian Drama. (4) III. Mr. Kaspin

A survey of Russian drama from the 17th century to the present.

125. Twentieth Century Russian Literature.

(4) I.

Mr. Moody

A survey of Russian literature from the early twentieth century.

*130. Dostoevsky. (4) II.

Mr. Kaspin

A study of Dostoevsky's principal novels and short stories in their historical and cultural contexts. Lectures and readings in English.

*131. Tolstoy. (4) III.

Mr. Kaspin

A study of Tolstoy's principal works in their historical and cultural contexts. Lectures and readings are in English.

132. Solzhenitsyn. (4) III.

Mr. Moody

A study of the work of the 1970 Nobel Prize winner for literature. Lectures and readings in English.

*133. Chekhov. (4) II.

Mr. Kaspin

Short stories and plays. Lectures and readings in English.

134. Nabokov. (4) III.

Mr. Johnson

A study of Nabokov's principal writings with particular attention to their Russian background. Lectures and readings in English.

150. Russian Folk Literature. (4) II.

Mr. Kaspin

The myths, epics, folk tales, folk lyrics, and other oral forms. Lectures and readings in English.

SCANDINAVIAN

139A-B-C. Scandinavian Literature in

Translation. (4-4-4) A I, B II, C III.

Miss Lundell

A: Saga, Tale, Vision; B: Drama; C: Prose.

SWEDISH

Lower Division Courses

1. Elementary Swedish. (4) I. Miss Lundell
Beginner's course.

2. Elementary Swedish. (4) II. Miss Lundell
(Continuation of 1.)

3. Elementary Swedish. (4) III. Miss Lundell
(Continuation of 2.)

*8A-B-C. Swedish Conversation. (2-2-2)

A I, B II, C III.

Miss Lundell

Prerequisite: Swedish 3 or equivalent.

* Not to be given 1973-74.

198. Readings in Swedish. (1-2) I, II, III.
Miss Lundell
Prerequisite: upper division standing.

199. Independent Studies in Swedish. (1-5)
I, II, III. Miss Lundell
199 courses are limited to 5 units in one quarter
and 12 units total.

SCANDINAVIAN

Upper Division Courses

- 139A-B-C. Scandinavian Literature in
Translation. (4-4-4) A I, B II, C III.

Prerequisite: None. Miss Lundell
A: Saga, Tale, Vision; B: Drama; C: Prose.

HISPANIC CIVILIZATION

Committee in Charge

Philip W. Powell, Ph.D., *Professor of History.*
Winston Reynolds, Ph.D., *Professor of Spanish.*
Jorge de Sena, Ph.D., *Professor of Portuguese and Comparative Literature.*
Brenton Campbell, Ph.D., *Associate Professor of Spanish (Chairman of the Committee).*
Jorge R. Fontana, Ph.D., *Associate Professor of Electrical Engineering.*
Francis A. Dutra, Ph.D., *Assistant Professor of History.*

INTERDEPARTMENTAL MAJOR

The interdepartmental major in Hispanic Civilization is designed to serve the needs of the following students: (1) those planning careers which will necessitate residence in, or knowledge of, the countries of Spanish and Portuguese speech and culture—for example, government service, business, journalism; (2) students preparing for graduate study in the social sciences or languages and literature, with special emphasis in the Spanish, Portuguese, and Latin-American fields; (3) students desiring a general education with some emphasis in this particular area of Western culture. The geographical areas included in the scope of this major are Spanish-America, Brazil, Spain, and Portugal.

The following required courses, and those recommended, form a general guide. Selection of specific courses will be made by the student in consultation with the committee in charge, and this selection will be based primarily upon the needs and objectives of the individual student. Credit may be given for studies undertaken in Spanish, Portuguese, or Latin-American schools.

PREPARATION FOR THE MAJOR

Required courses:

- (1) Spanish 25—Adv. Spanish (5), or Portuguese 101A-B-C—Adv. Reading and Composition (4-4-4)
- (2) History 8A-B—Comparative History of the Americas (4-4)

Recommended courses:

- Anthropology 2—Intro. to Cultural Anthropology (3)
- Anthropology 3—Introductory Archaeology (4)
- Anthropology 5—Introductory Physical Anthropology (4)
- Economics 1—Prin. of Economics—Micro (4)
- Economics 2—Principles of Economics—Macro (4)
- History 4A-B-C—Western Civilization (4-4-4)
- Sociology 1—Social Organization (4)
- Portuguese 101A-B-C—Advanced Reading and Composition (4-4-4)
or Spanish 25—Advanced Spanish (5), whichever is not taken as the required course (see above)

THE MAJOR

A minimum of 40 units is required as follows:

Required courses: (16 units)

- (1) One of the following 3 courses (8 units):
History 150A-B—Spain and Spanish Empire (4-4)
History 154A-B—Portugal Overseas (4-4)
History 155A-B—History of Portugal (4-4)

(2) Eight units from among courses listed below in Spanish and Portuguese literature:

Spanish literature:

- Spanish 104—Spanish Versification (4)
- Spanish 117A-B—Essayists of Spain and Spanish America (4-4)
- Spanish 122A-B—Medieval Spanish Literature (4-4)
- Spanish 123A-B—El Romancero (4-4)
- Spanish 124A-B—Introduction to the Theory of Literary Criticism (4-4)
- Spanish 131A-B—Golden Age Poetry (4-4)
- Spanish 134A-B—Golden Age Prose (4-4)
- Spanish 137A-B—Golden Age Drama (4-4)
- Spanish 140A-B—Cervantes: *Don Quijote* (4-4)
- Spanish 141A-B—Cervantes: Other Works (4-4)
- Spanish 145—Colonial Spanish American Literature (4)
- Spanish 156A-B—Spanish American Literature from Independence to the Present (4-4)
- Spanish 160A-B—XIXth Century Spanish Prose (4-4)
- Spanish 164—XIXth Century Spanish Poetry (4)
- Spanish 167—XIXth Century Spanish Drama (4)
- Spanish 170A-B—Spanish Literature from 1898 to 1936 (4-4)
- Spanish 175—Contemporary Spanish Literature (4)
- Spanish 183—Studies in Hispanic Literatures (4)
- Spanish 185A-B—Modern Spanish American Novel (4-4)
- Spanish 186A-B—Modern Mexican Literature (4-4)
- Spanish 187—Modern Spanish American Drama (4)
- Spanish 189A-B—Modern Spanish American Poetry (4-4)
- Spanish 191A-B-C—The Theme of *Don Juan* in Spanish Literature (4-4-4)
- Spanish 198—Individual Hispanic Authors (4)

Portuguese literature:

- Portuguese 105A-B-C—Survey of Portuguese Literature (4-4-4)
- Portuguese 106A-B-C—Survey of Brazilian Literature (4-4-4)
- Portuguese 132A-B—Luis de Camões (4-4)
- Portuguese 185—Brazilian Novel of the 20th Century (4)
- Portuguese 189—Brazilian Modernism (4)

The remaining 24 units may be chosen freely according to the student's individual interest either from among the courses listed above in History, Spanish and Portuguese, or from the additional ones listed below:

History:

- History 151A-B-C—Hispanic-American History (4-4-4)
- History 152B—Intellectual History of Spanish America: Modern Period (4)
- History 156A-B—History of Mexico (4-4)
- History 157A-B—History of Brazil (4-4)
- History 157C—Intellectual History of Brazil: Modern Period (4)
- History 158A-B—History of Inter-American Relations (4-4)

Hispanic Culture and Linguistics:

In Spanish:

- Spanish 100A-B-C—The Spanish Language: A Linguistic Approach (3-3-3)
- Spanish 101A-B—American Spanish (3-3)
- Spanish 107—Languages in Contact (4)
- Spanish 119A-B—Spanish Institutions and Culture (4-4)
- Spanish 121A-B—History of the Spanish Language (4-4)
- Spanish 150—XVIIIth Century Spanish Culture (4)
- Spanish 176A-B—Contemporary Spanish Culture (4-4)
- Spanish 178—Mexican Culture (4)

In English:

- Portuguese 114—Literature of the Portuguese Expansion (4)
- Portuguese 115—Brazilian Literature in English translation (4)
- Portuguese 121—History of the Portuguese Language (4)

- Portuguese 125A-B—Culture and Civilization of Portugal and Brazil (4-4)
- Spanish 115A-B—Masterpieces of Spanish Literature in English translation (4-4)
- Spanish 120A-B—Spanish American Literature in English translation (4-4)
- Spanish 180—Mexican Civilization—unless Spanish 178 has already been taken (4)
- Spanish 181—Social Poetry of Spain and Latin America in English translation (4)
- Spanish 188—Latin American Black Poetry in English translation (4)

Anthropology:

- Anthropology 133—Cultural Development in MesoAmerica (4)
- Anthropology 134—Modern Cultures of Latin America (4)
- Anthropology 135—Modern Mexican Culture (4)
- Anthropology 193—Problems in Meso American Prehistory (4)

Art:

- Art 154B—Pre-Columbian Art of South America (4)
- Art 154C—Pre-Columbian Art of Mexico and Central America (4)
- Art 161C—Art in Colonial Spanish America (4)
- Art 161D—Hispanic American Arts (4)
- Art 161E—Modern Mexican Painting (4)

Geography

- Geography 153—Latin America (4)

Music:

- Music 116 A-B—History and Literature of Hispanic-American Music (4)

Political Science:

- Political Science 132—Latin America in World Affairs (4)
- Political Science 148A-B—Governments of Latin America (4-4)
- Political Science 190L—Latin American Workshop (2)

TEACHING CREDENTIALS

Both the major and the minor in Hispanic Civilization are acceptable to the California State Department of Education as programs of study for a Standard Teaching Credential.

FRANCIS PRICE AWARD IN HISPANIC STUDIES

The Hispanic Civilization Committee each year selects the recipient or recipients of the Francis Price Award, a cash prize that was established by the Hispanic Society of Santa Barbara in 1959 and named for its founder. The award is currently supported by Francis Price, Jr., in memory of his father. It is given to the junior or senior student (or students) who has demonstrated outstanding proficiency in the Spanish or Portuguese language or in other aspects of Hispanic culture, who is specializing in Hispanic studies, and who intends to continue such studies at the University of California, Santa Barbara. The prize is based not on student need but solely on scholastic achievement and promise in Hispanic studies.

HISPANIC CIVILIZATION

This Committee also sponsors an annual lecture on some aspects of Hispanic Civilization by a distinguished visiting lecturer.

HISTORY

- Henry M. Adams, Ph.D., *Professor of History.*
- Morton Borden, Ph.D., *Professor of History.*
- A. Russell Buchanan, Ph.D., *Professor of History, Emeritus*
- Robert O. Collins, Ph.D., *Professor of History.*
- Alexander DeConde, Ph.D., *Professor of History.*
- Dimitrije Djordjevic, Ph.D., *Professor of History.*
- Donald M. Dozer, Ph.D., *Professor of History, Emeritus.*

¹Alfred M. Gollin, D.Litt., D.Phil. (Oxon.), *Professor of History*.

George M. Haddad, Ph.D., *Professor of History*.

C Warren Hollister, Ph.D., *Professor of History*.

Immanuel C. Y. Hsu, Ph.D., *Professor of History*.

Wilbur R. Jacobs, Ph.D., *Professor of History*.

Robert L. Kelley, Ph.D., *Professor of History*.

Harold C. Kirker, Ph.D., *Professor of History*.

¹Leonard M. Marsak, Ph.D., *Professor of History*.

¹Philip W. Powell, Ph.D., *Professor of History*.

Joachim Remak, Ph.D., *Professor of History*.

F. A. Bonadio, Ph.D., *Associate Professor of History*.

Alexander B. Callow, Ph.D., *Associate Professor of History*.

Frank J. Frost, Ph.D., *Associate Professor of History*.

Otis L. Graham, Jr., Ph.D., *Associate Professor of History*.

²Stephen N. Hay, Ph.D., *Associate Professor of History*.

¹Roderick W. Nash, Ph.D., *Associate Professor of History*.

Richard E. Oglesby, Ph.D., *Associate Professor of History (Chairman of the Department)*.

Carroll W. Pursell, Jr., Ph.D., *Associate Professor of History*.

Paul M. Sonnino, Ph.D., *Associate Professor of History*.

John E. Talbott, Ph.D., *Associate Professor of History*.

¹William H. Alexander, Ph.D., *Assistant Professor of History*.

⁴Lawrence Badash, Ph.D., *Assistant Professor of History*.

³Wilson E. Brownlee, Jr., Ph.D., *Assistant Professor of History*.

Jesús Chavarría, Ph.D., *Assistant Professor of History*.

⁴Chi-Yun Chen, Ph.D., *Assistant Professor of History*.

Harold A. Drake, Ph.D., *Assistant Professor of History*.

Francis A. Dutra, Ph.D., *Assistant Professor of History*.

Abraham Friesen, Ph.D., *Assistant Professor of History*.

Carl V. Harris, Ph.D., *Assistant Professor of History*.

Matthew V. Lamberti, Ph.D., *Assistant Professor of History*.

James C. McClelland, Ph.D., *Assistant Professor of History*.

J. Sears McGee, Ph.D., *Assistant Professor of History*.

Joan M. Reitzel, Ph.D., *Assistant Professor of History*.

Albert S. Lindemann, Ph.D., *Assistant Professor of History*.



Donald C. Davidson, Ph.D., *Lecturer in History*.

G. Wesley Johnson, Ph.D., *Lecturer in History*.

John W. Snyder, Ph.D., *Executive Vice Chancellor and Lecturer in History*.

Lillian E. A. Poe, M.Ed. *Acting Assistant Professor of History*.

PREPARATION FOR THE MAJOR

Required in lower division: History 4A-4B-4C (12 units) plus twelve other lower division history units, of which at least eight must be in the history of countries or cultures outside of Europe, including at least 4 units in non-Western history (Asia, Africa, Middle East).

THE MAJOR

Required: 40 units of upper division work in history, four units of which must be History 195. Upper division Q courses may be acceptable in lieu of 195. Information available from instructors of Q courses.

¹ Absent on Leave, Fall 1973.

² Absent on Leave, Winter 1974.

³ Absent on Leave, Spring 1974.

⁴ Absent on Leave, 1973-74.

Although the history department does not require a foreign language, those interested in history outside the English speaking world and those who contemplate graduate studies will be well-advised to take a foreign language.

Substitution of Requirements for Major

Students who have reached upper division status without having completed the lower division requirements for the major are permitted to substitute up to twelve units of upper division courses for the lower division requirement on a one-for-one basis without the need to petition. A list of acceptable substitutes may be obtained at the History Department office.

Courses thus substituted may not be used to fulfill the required 40 units of upper division work for the major in history, though credit will be applied toward the 60 units in upper division courses required for the B.A. degree.

DEPARTMENTAL COUNSELING

Certain members of the department are designated as undergraduate counselors. Every history major and combined social sciences major (history emphasis) is assigned to one of these counselors. Separate advisers are provided for M.A. and Ph.D. candidates.

THE GRADUATE PROGRAMS IN HISTORY

All graduate applications must be received in the Graduate Division by April 15.

THE MASTER OF ARTS PROGRAM

Students who wish to pursue work toward the Master of Arts degree in History at the University of California, Santa Barbara, must meet the general requirements for admission to graduate standing. In addition they will be expected to have completed an undergraduate major in history or its equivalent. Undergraduate deficiencies as stipulated by the Department must be made up in the first year, and do not count in satisfaction of graduate degree unit or course requirements. At the outset of their graduate work, students should confer with the departmental M.A. Adviser.

The Department of History regards its M.A. degree program as a general rather than a specialized program. The entrance requirements for both the M.A. and the Ph.D. programs are virtually the same, so that the decision to enter the M.A. program amounts to a preference for training in general rather than more specialized fields. (Please note, however, that even the Ph.D. program has important general aspects.) The M.A. candidates should particularly notice that the department offers reading courses (H200) designed to cover large, general field, whereas the H201s are reading courses likely to cover more specialized fields.

The Master of Arts degree will be awarded to students who satisfy the requirements prescribed by the Graduate Council and who, in addition, meet the following requirements of the Department of History.

1. *Foreign Language.* The passing of a reading examination in at least one foreign language approved by the Department. It is expected that the candidate will meet this requirement during the first quarter of his graduate program. In no case may he take the Comprehensive Examinations until the Foreign Language requirement has been met.

2. *Units of Work.* The completion of 36 units of upper division or graduate courses with at least a "B" average. At least 20 of these units must be in the graduate courses numbered between 200 and 290, including at least 8 units in research seminars (numbered between 202 and 290). With the permission of the professor who will supervise the work, a candidate may write a thesis within his field of specialization in partial fulfillment of the Master of Arts requirements. He will be allowed a maximum of 6 units of credit for the thesis (these units will not count as a substitute for one of the two research seminars). The thesis must be approved by a committee consisting of two departmental and one extradepartmental members. Its membership will be selected by the departmental Graduate Committee.

3. *Comprehensive Examinations.* The candidate for the M.A. degree must pass a written three hour examination in one field selected from any of the following three groups:

Group I

Ancient History
Medieval History
Modern Europe, 1450 to 1815
Modern Europe, 1789 to present

Group II

East Asia before 1800
East Asia since 1800
South Asia

Near Eastern History
Africa

Group III

United States to 1865
United States since 1840
Latin America, Colonial Period
Latin America, National Period
U. S. History with Special Emphasis on
Afro-American, Chicano, or Native
American History

In addition the student must elect one of the following options:

(1) A second three-hour examination in one field chosen from a group other than that of the first examination.

(2) A thesis on a subject to be determined in consultation with his adviser. The thesis subject must fall within the context of a field other than that of the first examination, but not necessarily a different group.

No candidate may be allowed to take the M.A. examination more than twice.

THE DOCTORAL PROGRAM

The History Department of the University of California, Santa Barbara, offers a program leading to the Ph.D. degree with specialization available in most areas of history. Students seeking admission to the doctoral program should apply to the chairman of the Department of History through the Office of the Dean of the Graduate Division, University of California, Santa Barbara.

1. *Admission:* The Graduate Committee of the Department of History may admit a beginning graduate student directly into the Ph.D. program if the student does not seek a terminal M.A. degree and meets the standards for admission. The following factors are considered in the assessment of a student's record: Intellectual attainment, skill in the use of the English language, academic honors, confidential letters of recommendation, practical experience where relevant, and information obtained from interviews.

Any student who has been admitted to the doctoral program, but who is unable to complete it, may ask to be considered for a terminal M.A. degree. If the student has passed one foreign language examination, and if the Doctoral Committee finds that the student has approximately met the unit requirements for the M.A., that committee may then recommend that the student be eligible to take two M.A. comprehensive examinations according to the regulations established for the regular M.A. candidates.

2. *Residence:* At least six quarters in residence of full time study and research in the doctoral program.

3. *Languages:* The minimum language requirement is proficiency in one foreign language relevant to the candidate's field of study.

The student is urged to complete the foreign language requirement as soon as possible, but in no case later than the end of his second year in the doctoral program. *No student will be allowed to take the general examinations for the Ph.D. degree without having completed the language requirement.*

4. *The Program:* The program falls into two parts: Preparation for and passage of the general doctoral examinations; preparation of the dissertation.

a. *Preparation for General Examinations:* Upon admission and arrival at Santa Barbara, the student must confer with the Director of Doctoral Studies who will explain all requirements and assign him to the candidate's Doctoral Adviser under whom the student will do his work. The Doctoral Adviser will be a specialist in the student's desired field of historical specialization, and will act as chairman of his examination committee. This committee will consist of the three professors under whom the student will be doing his doctoral work in the historical

fields as well as one professor in the outside field he will present for examination. The membership of the committee will be recommended by the candidate's Doctoral Adviser and approved by the Director of Doctoral Studies, and entered upon the student's graduate record card.

During the first quarter, the student, in consultation with his Doctoral Adviser, will select the three fields of history and one related field of study that he will present in the qualifying examination. The outside field must be comparable in size and scope to his history fields. One field of general historical study must be chosen from the list below, as well as a second field consisting of a specialized historical area within the general field. The specialized field will usually embrace the doctoral dissertation. A third field of historical specialization outside of the general field, and a fourth field related to, but outside of the history department, will also be required.

General Fields:

1. The United States
2. Modern Europe
3. Latin America
4. Medieval Europe

5. East Asia
6. The Middle East
7. South Asia
8. The Ancient Mediterranean World
9. Africa

The candidate's doctoral adviser will recommend to the Director of Doctoral Studies the four fields to be presented by the candidate. Once the Director of Doctoral Studies, acting for the department, approves these fields, they will be entered upon the student's graduate record card. Changes in the fields will not be made later than six months before the general examinations are taken.

The student will be expected to have taken, prior to the general examinations, at least six quarters of history research seminars, four quarters of which must be taken beyond the M.A. degree or its equivalent. The student must take either a graduate research seminar or another graduate course in each of the four areas presented for examination. The student is urged to take a course in historiography if he has not done so prior to admission to the doctoral program. History 201 courses are not traditional research seminars. They emphasize interpretation and are directed at analysis of the historical literature of the various fields in which they are given. History 596 is not acceptable in lieu of a 201. History 599 is designed to provide unit credit for students who are working on their doctoral dissertations (no more than 6 units a quarter). Reading programs for the Ph.D. general examinations should be developed in consultation with the members of the examination committee. It is the duty of the student and his Doctoral Adviser—and not the Director of Doctoral Studies, the Ph.D. Committee, or the Graduate Secretary—to see that all of these requirements are met prior to examination and that the student's office file is kept fully up to date.

Qualifying examinations for the Ph.D. are given annually at the beginning of October, January and May. They should normally be taken no later than two full-time years after the student has entered the program. Within a period of one month the student will take two written examinations. Each examination will be for three hours and each should be from one of his history fields. After he has passed these written examinations he will present himself for an oral examination of at least two hours duration in all four of his fields. The written examinations must be passed before the orals are taken. The selection of fields to be taken in the written examinations is to be approved by the Doctoral Adviser.

b. *Dissertation:* The doctoral dissertation must be an original work of historical research in the field of the candidate's specialization, bringing new data or new interpretations to bear on historical problems or exploring untouched, but significant historical fields. It must be written in clear prose, must have intellectual depth, and must demonstrate a mastery of historical methodology.

Except as authorized by the Graduate Council, each student in a doctoral program must satisfy all requirements for the Ph.D. within seven calendar years after he has been admitted to the Ph.D. program.

The examination committee will also serve as the dissertation committee. The committee's approval of the topic of the dissertation will constitute a departmental commitment, subject only to questions of quality. Upon approval of the dissertation by the committee, the candi-

date may be asked to present himself at a date to be established by his Doctoral Adviser for a Special Examination (oral) in the field of his dissertation.

c. A candidate will normally be expected to hold a teaching assistantship for at least one year, but this requirement may be waived under special circumstances.

Doctoral programs in the Department of History are offered in all fields of history.
More detailed information may be obtained from the chairman of the department.

TEACHING CREDENTIALS

Either a major or a minor in History may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of History and in the Graduate School of Education.

HISTORY

Lower Division Courses

4A-B-C. Western Civilization. (4-4-4)

I, II, III. The Staff

4A. Prehistory to 1050 A.D.

4B. 1050-1715.

4C. 1715-Present.

4A(S)-4B(S)-4C(S). Western Civilization.

(1-1-1) I, II, III. The Staff

After 4A-B-C begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminar, 4S, or a total of five units for History 4.

8A-B. Comparative History of the Americas.

(4-4) I, II. Mr. Dutra

8A. A comparative study of expansion, race relations, society, culture, economy, religion and government in the Western Hemisphere, 1492-1808.

8B. A comparative study of revolution, reform, reaction, minorities, economic growth, imperialism, government, and intellectual developments in the Western Hemisphere, Nineteenth and Twentieth Centuries.

8A(S)-8B(S). Comparative History of the Americas. (1-1) I, II

The Staff

Prerequisites: Lower division standing and consent of instructor.

Honors seminar. After 8AB begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminar, 8S, or a total of 5 units for History 8.

8Q. Topical Studies in the History of the

Western Hemisphere. (4) III. Mr. Dutra

Prerequisite: History 8A-8B or consent of instructor.

Tutorial guidance in individual reading programs and seminar discussions.

8Q(S). Topical Studies in the History of the Western Hemisphere. (1) III. The Staff

After 8Q begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminar, 8QS, or a total of five units for 8Q.

12. Greeks and Barbarians. (4)

I, II, III. Mr. Frost

Prerequisite: Lower division standing.

The story of the first great conflict between East and West, as told by the father of history, Herodotus.

17A-B. American Politics and Culture. (4-4)

I, II. The Staff

The leading issues in American life from the Colonial Era to the present.

17A(S)-17B(S). American Politics and

Culture. (1-1) I, II. The Staff

After History 17A-B begins, selected students will be invited to enroll in the honors seminar. Such students will receive one unit for the honors seminar (17S) or a total of five units for History 17.

19. The Rise of Communist China. (4) I.

Mr. Hsu

Examination of domestic and foreign factors leading to the rise of the People's Republic of China. The role of the United States will be stressed.

24. Modern Yugoslavia. (3) III.

Mr. Djordjevic

The creation of Yugoslavia, Interwar political, social, economic development. World War II: Yugoslavism in crisis. Revolution and break with Russia. Twenty-five years of socialistic experiment.

46. Survey of Middle Eastern History.

(4) I, II, III. Mr. Haddad

Emphasis on the meeting of civilizations in the Middle East, modernization and reform movements, and the background to contemporary problems and tensions.

72. The Modern American Mind.

(4) I. Mr. Kelley

An exploration of leading currents in modern thought. Particular attention to William James, Sigmund Freud, Erik Erikson, and to such broad social movements as the youth culture, social prejudice, and the impact of science.

74. Science, Technology & American Society.

(4) III. Mr. Pursell

A reading and discussion course of limited enrollment, aimed at exploring selected topics in the history of science, technology, and their relations with American society in general.

81. History and Culture of South Asia.

(4) I, II. Mr. Hay

An introduction to the cultural traditions and patterns of historical development of the countries of South Asia (India, Bangladesh, Pakistan, Ceylon, Nepal, and Afghanistan), from prehistoric times to the Gandhian era.

86. China's Cultural Tradition.

(4) II. Mr. C. Y. Chen

A brief survey of China's magnificent cultural achievements in the past, and a study of how the great tradition became an impediment to revolutionary changes and in what way it still shapes the course of the present revolution.

87. East Asian Civilization. (4) III.

Mr. Lamberti

Introduction to the ideas and culture that have shaped the history of China and Japan from earliest times to the seventeenth century.

89. Recent Japan. (3) II, III. Mr. Lamberti

A critical study of problems related to defeat, occupation, the cold war, economic resurgence, security and trade, and an uncertain future; attention is drawn to social reconstruction and the changes in culture and politics between 1945 and the present.

101A-B. History of the Chicanos. (4-4) I, II.

Mr. Chavarria

The history of the Chicanos, 1821 to the present; traces the social-cultural lifeline of the Mexicans who have lived north of Mexico.

101Q. Special Studies in Chicano History.

(4) III. Mr. Chavarria

Studies in selected aspects of Chicano history with an emphasis on social and economic history.

102. European Historiography. (4) I, II, III.

Mr. Friesen

Prerequisite: History 4A-B-C, or equivalent.

The study of the development of history as an independent discipline and the influence of intellectual and other trends or events upon the interpretation of history from the Greeks to the Moderns.

105. The Atomic Age. (4) I. Mr. Badash

The history of military and civilian uses of nuclear energy and the attendant problems. Topics included: Manhattan Project, decision to use the bomb, legislation, AEC, arms race, testing, fallout, civil defense, disarmament efforts, reactors, atoms for peace, foreign programs, espionage.

History 106A. The Origins of Western Physical Science, Antiquity-1600.

(4) I. Mr. Badash

The development of astronomy, physics, chemistry, and the organization of science, traced from Babylonian times through the Greek, Roman, Islamic periods, and the Middle Ages in the West, to the scientific Renaissance. Emphasis on the growth of scientific ideas.

History 106B. The Scientific Revolution, 1600-1875. (4) II. Mr. Badash

The establishment of heliocentric astronomy and

mechanical philosophy by Galileo, Newton, and others, the creation of scientific societies and periodicals, the rise of chemical and electrical science, the influence of science upon the Enlightenment, physical science survey in 18th and 19th centuries.

History 106C. Modern Physical Science,**1875-Present. (4) III. Mr. Badash**

The Second Scientific Revolution, including the discoveries of x-rays, radioactivity, the electron, relativity, and quantum theory; the growth of atomic and nuclear physics and of quantum mechanics; aspects of astronomy, chemistry, Nazi science, scholars' migration, and discovery of nuclear fission.

110. Ancient Near East. (4) III. Mr. Haddad

Study of Near Eastern civilizations from the Stone Age to the end of the Persian empire. Political history and cultural contributions of the Sumerians, Assyro-Babylonians, Egyptians, Hittites, Canaanites, Hebrews, Aramaeans and Persians.

History 111A-B. History of Greece.

(4-4) I, II. Mr. Frost

111A. From Neolithic times to Alexander the Great.

111B. From the death of Alexander to the reign of Justinian.

112. The Ancient Aegean. (4) III. Mr. Frost

Prerequisite: upper division standing or instructor's consent.

Pre-history and archaeology of the early Aegean littoral, from Mycenae to the Lyric Age.

113A-B. Roman History. (4-4) II, III.

Mr. Drake

113A. From Neolithic times to the fall of the Republic.

113B. The Roman Empire.

113Q. Special Studies in Roman History. (4)

III. Mr. Drake

Prerequisite: History 113AB or consent of instructor.

115. The Civilization of the Early Middle**Ages, 300-1050. (4) I. Mr. Hollister**

Prerequisite: History 4A-B-C, or equivalent.

The political, economic, and cultural evolution of Europe from the time of Constantine to the mid-eleventh century.

115Q. Special Studies in Medieval European History. (1-4) I, II, III.

Mr. Hollister

Prerequisite: History 115 or 116 or consent of instructor.

Study of specified topics in medieval European history. A research paper will be required.

116. The Civilization of the High Middle**Ages, 1050-1350. (4) II. Mr. Hollister**

Prerequisite: History 4A-B-C, or equivalent.

European civilization during the High Middle Ages. The struggle between Church and State, the rise of feudal monarchies, the revival of commerce, and the flowering of medieval culture.

117AB. Intellectual and Cultural History of Medieval Europe. (4-4) II, III.

Prerequisite: History 4A-B.

Ms. Reitzel

A topical study of several aspects of medieval thought with emphasis on the discussion of selected readings. The first quarter of the course will end with the humanistic revival of the twelfth century; the second, with the conciliar experiment of the fifteenth century.

117Q. Special Studies in Medieval Culture. (4) III.

Ms. Reitzel

Prerequisite: Either 117A or B or Phil 20B or Rel St 187 or consent of instructor.

Building upon preliminary work in the general area of medieval cultural and intellectual history, this new undergraduate seminar will allow interested students to do specialized projects. Limited enrollment.

118. Varieties of Utopianism and Social Reform from Joachim of Fiore to Karl Marx. (4) I, II, III.

Mr. Friesen

Prerequisite: History 4A-B-C.

A study of the varieties of utopian thought from Joachim of Fiore (1200) to Karl Marx (1848) and the relevance of this thought to social reform.

119. Economy and Society of Medieval Europe. (4) I.

Ms. Reitzel

Prerequisite: History 4A-B or equivalent.

A study of the economic and social transformations of Western Europe from the decline of imperial Rome to the Renaissance. Topics included are agrarian techniques, the character of medieval town life, the increasing importance of a money economy, and the conditions of social change.

120A-B. Renaissance-Reformation.

(4-4) I, II, III.

Mr. Friesen

Prerequisite: History 4A-4B-4C, or equivalent.

The political, economic, and cultural evolution of Europe, 1300-1648.

121ABC. History of Europe in Seventeenth and Eighteenth Centuries. (4-4-4)

I, II, III.

Mr. Sonnino

A. 1600-1715, political, social, economic, diplomatic, intellectual history in comparative and national contexts.

B. 1715-1789, the crisis of the old regimes, the Enlightenment.

C. 1789-1815, French Revolution and Napoleon.

122A-B-C. History of Europe from the Eve of the French Revolution to 1919.

(4-4-4) I, II, III.

Mr. Remak

Prerequisite: History 4A-B-C or equivalent.

A political, economic, cultural, and diplomatic history of Europe from the Enlightenment to the end of the First World War.

123A-B. History of Europe in the Nineteenth and Twentieth Centuries. (4-4) II, III.

Mr. Adams

Prerequisite: History 4A-B-C, or equivalent. History 123A is prerequisite to History 123B.

European civilization in the nineteenth and twentieth centuries; inter-relationship of the centuries and of Europe to the world.

124ABC. History of Southeast Europe (the Balkans) in the 19th and 20th centuries. (4-4-4) I, II, III.

Mr. Djordjevic

Historical development of Balkan peoples (Yugoslavs, Romanians, Bulgarians, Greeks, Albanians, Turks) in the Ottoman Empire, their struggle for independence, economic, social, cultural and political development of modern Balkan states.

125A-B. Scientific ideas and ethical thought in the modern world. (4-4) I, II.

Mr. Marsak

Prerequisite: A year course in European history. History 125A is prerequisite to 125B.

Intellectual history of modern Europe from Francis Bacon to the present.

125Q. Special studies in contemporary thought. (4) III.

Mr. Marsak

Prerequisites: History 125A and 125B.

A colloquium limited in enrollment to fifteen students.

126A-B. European Intellectual & Cultural History in the Nineteenth & Twentieth Centuries. (4-4) I, II, III.

Mr. Alexander

Prerequisite: A general knowledge of modern European history.

A study of European thought and its relation to the contemporary society during the nineteenth and twentieth centuries.

126Q. Colloquium in Intellectual & Cultural History of Europe in the Nineteenth & Twentieth Centuries. (4) II, III.

Mr. Alexander

Prerequisite: Admission by consent of instructor. Enrollment limited to 12 students.

A discussion of special topics in modern European thought and culture, with emphasis varying each year.

127A-B. History of European Socialism, 19th and 20th Centuries. (4-4) II, III.

Mr. Lindemann

Special emphasis on Marxism, its origins and competitors; the relationship of Leninism to orthodox Marxism; the development of Stalinist Communism; the deterioration of socialist ideology as a political force.

128A-B. Twentieth Century Europe. (4-4)

I, II.

Mr. Remak

A political, economic, cultural, and diplomatic history of Europe from the First World War to the present.

128Q. Special Studies in Twentieth Century Europe. (4) III.

Mr. Remak

Prerequisite: History 128A-B; admission by permission of instructor.

Special topics in European history from World War I to present.

129ABC. Europe in the 17th Century.

(4-4-4) I, II, III.

Mr. Sonnino

Prerequisite: History 4A-B-C.

Economic, social, political and intellectual history of the 17th century. Students who have taken History 129AB may take the third quarter as History 129Q and petition to have the course accepted in lieu of History 195.

History 129Q. Europe in the 17th Century. (4) II. Mr. Sonnino

Offered simultaneously with History 129C. Students may petition to have this course approved as a substitute for the required History 195.

130A-B. Modern Italy. (4-4) I, II.

Prerequisite: History 4A-B-C, equivalent, or consent of the instructor.

A survey of modern Italian history: the Risorgimento and unification of Italy, the parliamentary state and society of the liberals, 1860-1922, the Fascist era, the post-war republic and Italian "re-birth."

130Q. Studies in Modern Italian History. (4) III.

Prerequisite: Consent of instructor.

Studies in selected aspects of modern Italian history, from political and social to cultural and intellectual. A discussion course limited to 12 students.

132. Studies in Modern Imperialism & Colonization. (4) I, II, III.

Mr. Alexander

Prerequisite: Enrollment is limited to twenty students by consent of the instructor.

Selected studies of modern colonial societies emphasizing the intellectual and psychosocial issues raised by the meetings of different cultures. Perspectives of the colonizers and colonized will be examined; this will include works by such writers as Fanon, Memmi and Mannoni.

133A-B-C. History of Prussia and Germany since 1500. (4-4-4) I, II, III. Mr. Adams

Prerequisite: History 4A-B-C or equivalent.

The political, socio-economic, and cultural developments in Germany since the 16th century.

134A-B. Russian Intellectual History. (4-4) II, III.

Prerequisite: History 4A-B-C.

134A: From the introduction of Christianity to the mid-nineteenth century.

134B: From the mid-nineteenth century to the present.

135A. History of Russia: Origins to 1800. (4) I.

History 135B. History of Russia: 1800 to 1917. (4) II.

History 135C. History of Russia: 1917 to Present. (4) III.

135Q. Problems in the History of the Russian Revolution. (4) III. Mr. McClelland

Prerequisite: History 135C or consent of instructor.

A study of the various aspects and various interpretations of the Russian Revolution, 1917-1921. A consideration of the questions concerning the

nature of historical inquiry in general. Students will write papers based on investigation of topics of their own choosing. This course will satisfy the History 195 requirement for majors. Enrollment limited to 15 students.

137A. Nineteenth Century France. (4) I, II.

Mr. Talbott

The search for political stability and the impact of industrialization on nineteenth-century French society.

137B. Twentieth Century France. (4) II, III.

Mr. Talbott

Stress is laid on the political, economic and social consequences of war and decolonization.

137Q. France in the Twentieth Century.

(4) III.

Mr. Talbott

Prerequisite: Enrollment limited to 15 students.

Will examine the extent to which French society and politics have undergone a revolutionary transformation since the Second World War (1945 to present).

140A-B. Early Modern Britain. (4-4) I, II.

Mr. McGee

A history of England from the late Middle Ages to the 18th Century.

140Q. Studies in Early Modern British

History. (4) III.

Mr. McGee

Prerequisite: History 140 or consent of the instructor.

A writing seminar in which emphasis is placed upon the use of primary sources. Limited to twelve students.

141A-B. History of Britain in the 19th and 20th Centuries. (4-4) II, III. Mr. Gollin

143. The Nile Quest. (4) II. Mr. Collins

An examination of African and Victorian societies during the half century in which English explorers sought the source of the Nile. The greatest geographical puzzle of the nineteenth century, the search for the source of the Nile, opened Africa to European partition, imperialism and modernization.

144. Imperialism and Resistance in Africa.

(4) III.

Mr. Collins

An examination of African resistance to European encroachment and colonialism in tropical Africa.

145A-B. The Middle East in the Middle

Ages. (4-4) I, II.

Mr. Haddad

Prerequisite: History 4A-B-C or equivalent.

The Christian and Muslim world 395-1453, including a study of the history and civilization of the Islamic countries, and the neighboring Byzantine Empire.

146A-B. History of the Middle East in the Nineteenth and Twentieth Centuries.

(4-4) I, II.

Mr. Haddad

The Ottoman Empire and the Eastern Question. Reform movements, cultural and national awakening, and the impact of the West in Iran, Turkey and the Arab countries. Evolution of the Middle Eastern states until the present time.

147AB. African Civilizations.

(4-4) I, II.

Mr. Johnson

The political, social, and cultural history of tropical Africa from 1000 A.D. to the present. Emphasis will be on selected topics and case studies.

147Q. Special Studies in Africa: Modern African Intellectual History.

(4) I, II, III.

Mr. Johnson

Prerequisite: Limited enrollment, apply to instructor. Reading knowledge of French recommended but not required.

Discussion of topics and books on modern African intellectual and cultural history.

149. West African History. (4) III.

Mr. Johnson

Prerequisite: Some familiarity with African subject matter suggested.

Political and cultural leaders of West Africa. Interpretive studies of modern West African political and intellectual leaders with emphasis on resistance to colonial rule, drive for self-government, renaissance of neo-African culture, neo-colonialism, and continuing revolution.

150A-B. Spain and Spanish Empire. (4-4)

I, II.

Mr. Powell

Prerequisite: Upper division standing or permission of instructor.

150A. Medieval Spain, to 1516.

150B. From 1516 to the present.

151A-B-C. Hispanic-American History.

(4-4-4) I, II, III.

Mr. Dutra,

Mr. Chavarría

151A. Colonial background and the winning of independence.

151B. Struggle toward nationality, cultural developments, and international relations of the Hispanic-American countries during the nineteenth century.

151C. History of the Hispanic-American nations during the twentieth century.

152B. Intellectual History of Spanish**America: Modern Period. (4) I, II, III.**

Mr. Chavarría

Prerequisite: History 8A-B-C recommended.

Focuses on the impact of intellectuals and ideas—liberalism, romanticism, positivism, socialism—on Spanish American society in 19th and 20th centuries.

153. Comparative Seaborne Empires,**1415-1825. (4) I, II, III.**

Mr. Dutra

Analysis of the similarities and differences between the overseas activities of Portugal, Spain, France, England, and the United Provinces of the Netherlands.

154AB. Portugal Overseas.

(4-4) I, II, III.

Mr. Dutra

154A. A comparative analysis of Portuguese activity in Africa, Asia, and America, 1415-1825.

154B. The Portuguese in Africa and Asia, 1826 to the present.

155AB. History of Portugal.

(4-4) I, II, III.

Mr. Dutra

155A. A general survey of Portugal from its origins to 1580, with an emphasis on social, economic, and cultural history.

155B. Modern Portugal. 1580 to the present.

156A-B. History of Mexico. (4-4) I, II.

Mr. Powell

Prerequisite: Upper division standing or permission of instructor.

156A. From Spanish Conquest to the end of the eighteenth century.

156B. The nineteenth and twentieth centuries.

157A-B. History of Brazil. (4-4) I, II.

Mr. Dutra

A general survey of the history of Brazil in two quarters: 157A. From the discovery of the New World to the formation of the Empire.

157B. Modern Brazil.

157C. Intellectual History of Brazil:**Modern Period. (4) II, III.**

Mr. Dutra

Focuses on the impact of intellectuals and ideas on Brazilian society in the 19th and 20th centuries.

158A-B. History of Inter-American**Relations. (4-4) I, II.**

Prerequisite: History 8A-B-C or upper division standing.

158A. History of relations between and among the American nations from independence to 1900.

158B. History of inter-American relations and the Pan-American movement since 1900.

159AB. History of American Women.

(4-4) I, II, III.

Ms. Weiderrecht

Investigation of the position and role of women during different periods of American history.

159A. From the colonial period to the 1870's.

159B. From the 1870's to the present.

159Q. Special Studies in Women's History.

(4) III.

Ms. Wiederrecht

Prerequisite: History 159 or consent of instructor. The study of special topics in the history of women in the United States.

History 160A. The American South to 1861.

(4) II.

Mr. Harris

The origins and development of distinctive economic, social, political, and cultural patterns in the ante-bellum South.

History 160B. The American South, 1865 to the Present. (4) III.

Mr. Harris

Change and resistance to change in Southern economic, social, political, and cultural life since the Civil War.

161. Colonial and Revolutionary America, The Indian, The Frontier. (4) I, II.

Mr. Jacobs

Prerequisite: Upper division standing.

Political, cultural, and social history of the thirteen

colonies, their neighbors, the origins of Negro slavery, frontier expansion into Indian wilderness land, and the American Revolution.

162A-B. The United States: The New Nation. (4-4) I, II. Mr. Borden

Prerequisite: History 17A-B, an equivalent course, or consent of the instructor.

History of the United States from the close of the American Revolution to the Era of Good Feelings, with emphasis on the creation of a federal government, the rise of political parties, and the emergence of national character.

163A-B. Jacksonian America. (4-4) I, II.

Prerequisite: History 17A-B or equivalent.

The genesis and fruition of this fundamental reorganization in American society, focusing on development of new democratic political organization and leadership roles. Includes related new departures in religious and economic affairs, foreign policy, and literature.

164A. Comparative Slave Societies.

(4) I, II, III. Mr. Bonadio

165. The United States: 1876-1900.

(4) III. Mr. Harris

Prerequisite: History 17A-B, an equivalent course, or consent of the instructor.

166A-B. Recent History of the United

States. (4-4) II, III. Mr. Graham

Prerequisite: History 17A-B, an equivalent course, or consent of the instructor.

Political, economic, and social development of the United States from 1900 to the present time.

166Q. The Historical Background of Contemporary Problems. (4) III.

Mr. Graham

Prerequisite: Consent of the instructor.

Special studies in recent American history: the historical background of contemporary problems.

167A. Rise of the American Marketplace.

(4) I. Mr. Brownlee

American economic development to the Civil War, including the dynamics of European colonial expansion, the impact of mercantilism and the Revolution, the growth and redistribution of population, and the sources of early industrialization.

167B. Development of American Industrial Society, 1860-present. (4) II.

Mr. Brownlee

Economic and social history of the United States associated with the continuing industrial transformation of the nation, emphasizing a dynamic population and the changing organizational basis of industrial society, including the development of the modern corporation and the welfare state.

168. History of American Economic

Thought. (4) III. Mr. Brownlee

History of economic thought in America, examining the relationships among economic thought, public policy, and economic change from early colonization to the establishment of the modern industrial state.

169A-B. History of the Afro-American. (4-4)

I, II, III.

Ms. Poe

The Negro in United States history, from the era of colonization to the present. Stress will be placed on the reciprocal relation of the Negro and the American social order.

169Q. Selected Studies in Afroamerican

History. (4) III.

Ms. Poe

Prerequisite: History 169A and B, or consent of instructor.

Studies of selected themes in nineteenth and twentieth century Afroamerican history, such as, the Afroamerican response to national reform movements. A reading and discussion course with limited enrollment.

170A. History of the Inarticulate. (4) I, II.

Mr. Bonadio

A reconstruction of the personal life of the American people in pre-industrial society, with special emphasis on social survival and individual discipline.

170B. Civil War and Reconstruction.

(4) II, III.

Mr. Bonadio

171A-B. History of the Foreign Relations of the United States. (4-4) I, II.

Mr. DeConde

Prerequisite: History 17A-B, an equivalent course, or consent of the instructor.

171A. The theory and practice of American foreign policy from colonial times to 1900.

171B. Analysis of twentieth-century developments. Emphasis on broad policy, concepts and ideas.

S172AB. The American Intellectual in the 20th Century. (4-4) II, III. Mr. Kelley

Emergence and role of the intellectual as a social type in modern American culture; relations to national power; anti-intellectualism; the institutional settings within which intellectual life takes place; comparison with intellectual elites abroad, and growing world influence as century proceeds. The ideas and work of major thinkers in each period. Forms year-sequence with History 72.

S172Q. American Intellectual Life in the 1960s. (4) I.

Mr. Kelley

Prerequisite: Consent of instructor.

A reading and research seminar, limited in size to ten students, resulting in the writing of a research paper.

173A-B. American Social & Intellectual

History (4-4) I, II

Mr. Nash

Prerequisite: History 17A-B, an equivalent course, or consent of instructor.

173A. Traces the origins, influence, and modification of ideas, attitudes, and social institutions through the Civil War. Focuses on the perfectionist impulse, religion, the nature of slavery, implications of democracy, and the development of American nationalism.

173B. Emphasizes Darwinism, social Darwinism, pragmatism, socialism, and the effect on industrialization, urbanization, and the First World War on American thought. Special attention to social problems and intellectual currents since 1945.

173C. American Environmental History (4)

III. Mr. Nash

Traces three centuries of changing American attitude toward the natural environment with an emphasis on the rise of the conservation movement.

S-173. American Popular Cultural History.

(4) III. Mr. Nash

Traces the origins and development of popular culture in modern industrial America, 1860 to the present. Emphasis is on the ideas, attitudes and values reflected in mass entertainment media such as popular literature, motion pictures, radio, television and popular music.

T-173. Wilderness and Man: History, Meaning, and Management. (4) I, II, III.

Mr. Nash

The significance of wilderness in world history with an emphasis on man's relation to it both aesthetically and economically. The perspective will be international, although the American experience is the central concern. Special attention to the problems of preserving wilderness in modern civilization and to the future of wild country. Case studies and audio-visual techniques will be an important part of the course as will a wilderness field trip.

174A-B. The Machine in America.

(4-4) I, II. Mr. Pursell

Social history of devices and techniques, from handicraft through mass-production to automation; invention, innovation, scientific research, and organization in such areas as agriculture, manufactures, transportation, warfare, and the urban environment.

174C. Social History of American Science.

(4) III. Mr. Pursell

The social role of science and scientists in America from the Puritans to the present. Emphasis on social behavior, institutions, public policy and the interrelations of the scientific culture with the larger American context.

174Q. Studies in the History of American

Technology. (4) III. Mr. Pursell

Prerequisite: History 174A-B, or permission of instructor.

A reading and discussion course, with a limited enrollment.

174D. History of the Military-Industrial

Complex. (4) III. Mr. Pursell

The history of American business, the military profession, and their relations with civilian government from the Early Republic to the present.

175A-B-C. American Cultural History.

(4-4) I, II, III. Mr. Kirker

Prerequisite: None.

The origin and development of a national character and culture since 1607; emphasis is upon the use of artificial evidence, such as architecture, painting, and literature, in formulating historical interpretations regarding the American character and culture.

176A-B. The American West. (4-4) I, II.

Mr. Oglesby

Prerequisite: History 17A-B, an equivalent course, or consent of the instructor.

The West as a frontier and as a region, in transit from the Atlantic seaboard to the Pacific, and from the seventeenth century to the present.

177. History of California. (4) I, II, III.

Mr. Oglesby

California as a case study of national trends, and as an unique setting with its special problems and culture.

178A-B. American Urban History.

(4-4) II, III. Mr. Callow

Prerequisite: History 17A-B or equivalent.

A study of the political, economic, social, and intellectual impact of the city upon American history, and the impact of history upon the growth of American urbanization.

178Q. Studies in American Urban History.

(4) III. Mr. Callow

Prerequisite: History 178A-B or consent of the instructor.

A reading and discussion course limited in size to ten students.

179Q. The Indian and the American Frontier: Ideas and Interpretations. (4) III.

Mr. Jacobs

Prerequisite: Upper division standing.

The role of the American Indian in United States history. A study of historical thought and interpretation concerning main currents of national development and the origins of American attitudes and policies toward America's native people. A reading and discussion course.

180. Southeast Asian History. (4) III.

Mr. Hay

A survey of the history of the countries of Southeast Asia (Burma, Thailand, Malaysia, Vietnam, Indonesia, the Philippines, Cambodia, and Laos). A research paper will be required. Not for pass-fail students.

181. India in the 19th and 20th Centuries.

(4) III. Mr. Hay

An overview of developments in the Indian subcontinent in the past two centuries, with emphasis on Gandhi's antecedents, role, and successors.

183. Gandhi. (4) III.

Mr. Hay

The primary purpose of the course is to understand the various phases of Gandhi's work and ideas as they developed in successive historical contexts. The significance of his ethical, political, and religious ideas and disciplines will be emphasized. Each student will write a research paper based on primary source materials on a topic of his/her own choosing, and will communicate the results to the class.

184. History of Chinese Thought.

(4) III. Mr. C. Y. Chen

A study of the development of Chinese thought from Confucius to Mao Tse-tung.

185A-B. Modern China. (4-4) I, II. Mr. Hsu

185A: From 1600 to 1900.

185B: From 1900 to date.

186ABC. History of China.

(4-4-4) I, II, III. Mr. C. Y. Chen

186A. Ancient China, to A.D. 200.

186B. Medieval China, A.D. 200-1000.

186C. Early Modern China, A.D. 1000-1600.

187A-B. History of Japan. (4-4) I, II.

Mr. Lamberti

A survey of Japan from its origins to the present. Political, social and cultural history.

188A-B. Japan: Tradition and Modernization. (4-4) II, III.

Mr. Lamberti

Prerequisite: History 187A-B or instructor's permission.

Analysis of the role of traditional Japanese institutions and values in the process of modernization. Emphasis on social rather than political trends. 188A is prerequisite to 188B.

190. Problems in Chinese History.

(4) III.

Mr. Chen

Studies on selected topics of traditional China.

192. Truth and Fiction: a Century of German History in Literature. (4) I. Mr. Remak,

Mr. Exner

Prerequisite: Upper division course in modern Europe or in German literature.

German history, 1870-1971, as reflected in German literature. [Tentative list of authors to be read: Fontane, Grillparzer, George, Hofmannsthal, Roth, Plievier, Brecht, Hochhuth, Johnson.]

195 E, AM, LA, AS, AF. The Methods of History. (4) I, II, III, IV. The Staff

Prerequisite: Upper division major in history or consent of the instructor.

E: Europe; AM: America; LA: Latin America; AS: Asia; AF: Africa. Required of all history majors, but may be waived for students who have taken Q courses requiring a major paper. (Q course instructors petition to have the 195 requirement waived for students in their courses.) A research seminar which trains the students in historical research methods. The seminar will generally concentrate in the area of the instructor's main field of interest and a research paper will be written. May be taken more than once.

199. Independent Studies. (1-5) I, II, III.

The Staff

Student must have completed 125 units with 3.0 grade point average, and must be a major in history or present justification to both the instructor and the department for diverting from this norm. A maximum of 12 units will be allowed during the undergraduate course of study. The description of any one 199 must not be identical to any existing course description.

Graduate Courses**200 E, AM, LA, AS, AF. Historical Literature. (4) I, II, III, SS. The Staff**

E: Europe; AM: America; LA: Latin America; AS: Asia; AF: Africa. A reading course in a general field of history, within which the professor's specialization lies. Introduces the student to the sources and general literature of the field in question. Particularly designed to meet the needs of M.A. candidates as well as those Ph.D. candidates seeking broad preparation. Written work as prescribed by the instructor. May be taken more than once.

201 E, AM, LA, AS, AF. Advanced Historical Literature. (4) I, II, III, SS. The Staff

E: Europe; AM: America; LA: Latin America; AS: Asia; AF: Africa. A reading course in a field of the professor's specialty. Introduces the student to the sources and literature of the field in question. Written work as prescribed by the instructor. May be taken more than once. Open to both M.A. and Ph.D. candidates.

202. European Historiography. (4) I.

Mr. Adams

The nature of history and historical writing as revealed by the major historians of European civilization since the Greeks.

203. Research Seminar in American Historiography. (4) I, II, III

Mr. Jacobs

Emphasis is on the writings of the great chroniclers of American history. One research paper is prepared.

*Unless otherwise noted, students must take all of the following courses for two consecutive quarters.***204. Historiography & Philosophy of History. (4) I, II. Mr. Marsak**

Emphasis upon studies in the philosophy of history, and the study of history as a branch of learning. A long research paper will be prepared. This is a one-quarter seminar.

205. Research Seminar in Comparative History. (4) I, II, III. Mr. Kelley

Study and use of new methodologies in comparative history. Students will prepare research papers in fields appropriate to their competence.

207. Historical Methods and the Social Sciences. (4) I, II. Mr. Brownlee, Mr. Harris

Exploration of the application of social science theory and methodology, including quantitative analysis, to the historical study of social structure and mobility, demographic change, distribution of political power, voting behavior, legislative behavior, interaction of public policy and economic development and distribution of income and wealth. This is a one quarter course.

211. Seminar in Greek History. (4) I, II, III. Mr. Frost

Prerequisite: Reading knowledge of French, German or Italian.

Research seminar in Greek history. From time

to time the seminar will be limited to candidates specializing in ancient history, and with a reading knowledge of Classical Greek.

213. Seminar in Roman History. (4-4) II, III.
Mr. Drake

Prerequisite: Reading knowledge of appropriate foreign language. Selected topics in the history of the Roman Republic and Empire, with particular emphasis on problems of the Later Roman Empire.

215. Seminar in Medieval History. (4) II.
Mr. Hollister

Prerequisite: History 116: Medieval Europe, 1050-1350.

220. Seminar in Renaissance-Reformation.
(4) I, II, III. Mr. Friesen

Prerequisite: Reading knowledge of one Western European language besides English.

Research seminar, stressing problems in comparative European social and intellectual history, 1450-1650.

222. Seminar in 18th Century European History. (4) II.

Prerequisite: Graduate standing or permission of professor in charge.

Selected topics in the history of Europe, 1715-1815.

223. Seminar in Modern European History.
(4) II, III. Mr. Adams, Mr. Remak

Prerequisite: Graduate standing.

May be taken more than once.

225. Research Seminar in the Idea of Progress. (4) II. Mr. Marsak

Prerequisite: A reading knowledge of at least one foreign language.

226. French Intellectual History. (4) II, III.

Prerequisite: History 201. Mr. Marsak
The idea of reason in 17th century France.

227. Research Seminar in European Socialism, 19th & 20th centuries.
(4-4) I, II. Mr. Lindemann

229. Seminar in 17th Century European History. (4-4) I, II, III. Mr. Sonnino

231. Seminar in Modern French History.
(4) II, III.

235. Seminar in Russian History. (4) I, II.
Prerequisite: Reading knowledge of Russian, German or French, or consent of the instructor.

236. Seminar in Southeast European History.
(4) I, II, III. Mr. Djordjevic

237. Seminar in Modern German History.
(4) II, III. Mr. Remak

240. Seminar in Tudor-Stuart History. (4) I.
Research seminar in Tudor-Stuart history: select topics requiring use and interpretation of primary sources.

241. Seminar in Modern British History. (4)
II, III. Mr. Gollin

Research seminar.

242. Seminar in Early 20th Century British History. (4-4) I, II, III. Mr. Dangerfield

244. Seminar in Ancient Near East & Intellectual History.
(4) I. Mr. Snyder

Prerequisite: Reading knowledge of French or German.

Problems in the development of man's intellectual response to his environment in the Ancient Near East. This is a one-quarter seminar.

246. Seminar in the Modern History of the Middle East. (4) II. Mr. Haddad

Prerequisite: History 146A or 146B.

Research seminar stressing the movements of nationalism, revolution and change that have characterized the modern history of the Middle East since 1850.

248. Research Seminar in African History.
(4) III. Mr. Collins

Prerequisite: History 201.

History 248 is designed to provide the graduate student with the opportunity to explore in depth one or more of the subjects with which he has become acquainted in History 201.

250. Seminar in Spain and Spanish Empire.
(4-4) II, III. Mr. Powell

Prerequisites: Graduate standing or permission of professor; reading knowledge of Spanish.

252. Seminar in Social and Intellectual History of Modern Latin America.
(4-4) II, III. Mr. Chavarría

Prerequisites: History 201; History 151B-C; History 152B or permission of instructor.

Seminar on nationalism in Latin America.

254. Latin America, Spain and Portugal.
(4-4) I, II, III. Mr. Powell, Mr. Dutra

Prerequisites: Reading knowledge of Spanish or Portuguese required (in special cases, French, German, Dutch, or Italian acceptable).

Individual reading, research, and writing in the history of Spain, Portugal, and their Empires in The Americas, Africa, and Asia. For Brazil and Mexico, national periods included.

256. Seminar in Mexican History. (4-4)
II, III. Mr. Powell

Prerequisites: Graduate standing or permission of professor; reading knowledge of Spanish.

257. Seminar in Luso-Brazilian History. (4)
I, II, III. Mr. Dutra

Research seminar with particular stress on Portuguese, Spanish and Brazilian archival materials. Course will provide the graduate student with opportunity to analyze problems in the history of Portugal and her overseas empire with special emphasis on Brazil.

258. Seminar in the History of Inter-American Relations. (4) III.

Prerequisite: Reading knowledge of a foreign language, preferably Spanish, Portuguese or French.

259. Seminar in Recent Hispanic-American History. (4) I, II.

260. Seminar in American South. (4-4) II, III.

Mr. Harris

Research in 19th and 20th century Southern history.

261. Seminar in Colonial America, the Frontier, and the Indian. (4-4) I, II.

Mr. Jacobs

262. Seminar in Early National Period of United States History. (4) I, II, III.

Mr. Borden

263. Seminar in Jacksonian America. (4) I, II, III.

Guided research, and discussion, in the history of Jacksonian America.

History 264. Seminar in Civil War and Reconstruction. (4-4) I, II, III.

Mr. Bonadio

265. Seminar in American Political and Social History. (4-4) II, III.

Mr. Harris

Research in selected historical problems, focusing on analysis of political behavior, social structure, and social mobility.

266. Seminar in Recent History of the United States. (4) I.

267. Seminar in American Economic History. (4-4) II, III.

Mr. Brownlee

269. Seminar in American Urban History. (4-4) II, III.

Mr. Callow

270. Seminar in American Constitutional History. (4) III.

Prerequisite: Winter quarter of 201, or consent of the instructor.

Research in judicial review in American history.

271. Seminar in Diplomatic and Political History of the United States. (4-4) II, III.

Mr. DeConde

S272. The American Intellectual in the 20th Century. (4-4) II, III.

Mr. Kelley

Forms the graduate segment of a sequence of courses beginning in lower division: History 72, the Modern American Mind; History S172AB, the American Intellectual in the 20th Century; Hist S172Q, American Intellectual Life in the 1960's.

273. Research Seminar in American Social & Intellectual History. (4-4) I, II, III.

Mr. Nash

274. History of Science and Technology in America. (4) I, II, III.

Mr. Pursell

Prerequisite: Consent of the instructor.

Research seminar emphasizing the social aspects of selected topics in the history of science and technology in America.

275. American Cultural History. (4-4) I, II, III.

Mr. Kirker

276. Seminar in American West and California. (4-4) I, II.

Mr. Oglesby

278. Science in Twentieth Century America. (4) I, II, III.

Mr. Badash

The atomic age—the background to the atomic bomb, its development, use, and postwar problems.

280. Seminar in Modern China. (4) III.

Prerequisite: History 185A-B.

Mr. Hsu

A research seminar in the important aspects of modern Chinese history.

281. Politics and Culture in the Gandhian Era. (4) I, II, III.

Mr. Hay

Prerequisite: History 181A-B.

A research seminar devoted to the period 1919-1948 in the history of India and Pakistan.

284. Seminar in the History of Chinese Thought. (4) II.

Mr. Chen

Prerequisite: History 19A, or 186A-B, or permission of instructor.

Selected studies of leading thinkers on important schools of thought. This is a one-quarter course.

285. Seminar in United States Relations with the Far East. (4) III.

Mr. Hsu

Prerequisite: History 185A-B, or 187A-B.

A research seminar, with particular stress on the use of archival materials. The role of the United States in the development of the Modern Far East is emphasized.

288. Seminar in the Modernization of Japan. (4) II, III.

Mr. Lamberti

A research seminar in the important aspects of modern Japanese history. This is a one-quarter course.

596AA-596ZZ. Directed Reading and Research. (2-4) I, II, III.

Staff

Prerequisite: Graduate standing and consent of the instructor.

Individual tutorial. Instructor usually students' major professor. Minimum of 2 units per quarter. Each faculty member has an unique letter designation, which is the same as in the 599 series.

History 598AA-598ZZ. Master's Thesis research & preparation. (2-6) I, II, III.

The Staff

Prerequisite: Graduate standing and consent of the instructor.

Only for research underlying the thesis, writing the thesis. Instructor should be the chairman of the student's thesis committee.

Each faculty member has an unique letter designation, which is the same as in the 599 series.

599AA-599ZZ, Ph.D. Dissertation**Preparation, (2-6) I, II, III. The Staff**

Prerequisite: Graduate standing and consent of the instructor.

Only for writing the dissertation. Instructor should be the chairman of the student's doctoral committee. Each faculty member has a unique letter designation, as follows:

HA Henry M. Adams; MB Morton Borden; RC Robert O. Collins; AD Alexander DeConde; DD Dimitrije Djordjevic; AG Alfred M. Gollin; GH George M. Haddad; WH C. Warren Hollister; IH Immanuel C. Y. Hsu; WJ Wilbur R. Jacobs; RK

Robert L. Kelley; HK Harold Kirker; LM Leonard M. Marsak; PP Philip W. Powell; JR Joachim Remak; FB F. A. Bonadio; AC Alexander B. Callow; FF Frank J. Frost; OG Otis L. Graham; SH Stephen N. Hay; RN Roderick W. Nash; RO Richard E. Oglesby; CP Carroll Pursell; PS Paul M. Sonnino; LB Lawrence Badash; EB W. Elliot Brownlee; JC Jesus Chavarria; CC Chi-Yun Chen; FD Francis A. Dutra; AF Abraham Friesen; CH Carl V. Harris; ML Matthew V. Lamberti; AL Albert S. Lindemann; WA William H. Alexander; GD George Dangerfield; JT John E. Talbott; MR Joan M. Reitzel; SM J. Sears McGee; JM James C. McClelland; HD Harold A. Drake; GJ G. Wesley Johnson; LP Lillian A. Poe.

 INTERDISCIPLINARY COURSES

The courses listed below extend beyond traditional description lines:

Interdisciplinary 101 — The Animal in Primitive and Ancient Art, (2) II.

D. Davenport, Professor of Zoology

Lecture, one hour; seminar, 0.5 hr.

Prerequisite: Upper Division status.

A melange of natural history, anthropology, mythology and art, approaches the subject from the point of view of the naturalist, that is, "by the animal" ("octopus", "fish", "bird", "cat", etc.) rather than by the "culture". Emphasis is placed on the relation of animals to man as seen in the art of "primitive" societies and of the west from the Paleolithic to the rise of classical humanism. An effort is made thereby to impart to the student a greater appreciation of

the esthetic and, indeed, spiritual importance to us of the creatures making up the web of life on this ravaged planet.

Law and Society 190A-B:

See listing under Law and Society major.

Medieval Studies 100:

See listing under Medieval Studies major.

Various other cross-disciplinary courses are cross-listed under two or more departments.

 LAW AND SOCIETY*Committee in Charge*

Donald R. Cressey, Ph.D., *Professor of Sociology.*

Carl C. Hetrick, Ph.D., *Assistant Professor of Political Science.*

Llad Phillips, Ph.D., *Assistant Professor of Economics.*

C. Herman Pritchett, Ph.D., *Professor of Political Science.*

Thomas S. Schrock, Ph.D., *Associate Professor of Political Science (Chairman of the Committee).*



Samuel S. Kushner (*Program Coordinator*).

INTERDEPARTMENTAL MAJOR

The Law and Society major affords the student an opportunity to study the law and legal institutions from the perspective of several disciplines. It is an interdisciplinary program drawing its courses from existing offerings in law and legally related topics from the major sponsoring departments of Political Science, Sociology and Philosophy, as well as optional electives from the departments of Economics, Anthropology, Environmental Studies and Mechanical Engineering.

The program is structured to permit the emphasis of one or more of the fields represented by the sponsoring departments. Students may follow a general program, or they may choose to do additional studies in political science, sociology or philosophy.

The major is designed to benefit both the student who desires a liberal education with a unique area of emphasis and the student who may intend to enter graduate or law school.

PREPARATION FOR THE MAJOR

Required: Philosophy 1 or 5; Political Science 5 and 10, or 12 or 100; Sociology 1 or 101; History 4A-B-C.

THE MAJOR

Required: 40 upper division units, including the following specified courses:

Group A: Sociology 173 and either Sociology 172 or 174 or 175.

Group B: Philosophy 192 and either Philosophy 104 or 121 or 193.

Group C: Political Science 115 and either Political Science 117, or 125 or 165 or 166 or 167.

Group D: Law and Society 190A-B.

Eight units of upper division law and society electives are to be chosen with the approval of Faculty Adviser. These may be additional courses from groups A, B, or C, or may be selected from one of the following: Anthropology 115, Economics 160, Environmental Studies 125, Mechanical Engineering 180, or Speech 159.

Upper Division Courses

190A-B. Senior Seminar in Law and

Society. (4-4) I, II, III. Mr. Kushner

Prerequisite: Sociology 173, Philosophy 192, Political Science 115, and advanced standing in the

Law and Society Major, or permission of the instructor.

An intensive introduction to interdisciplinary studies in law and society for senior admitted to the major. Preparation of an extensive paper, integrating knowledge acquired in the major, will be required.

LINGUISTICS

Arthur Schwartz, Ph.D., *Associate Professor of Linguistics.*

C. Douglas Johnson, Ph.D., *Assistant Professor of Linguistics.*

Charles Li, Ph.D., *Assistant Professor of Linguistics.*

A program in Linguistics initiated in 1967-68 offers both undergraduate and graduate level instruction. An undergraduate major is now offered and the program is presently under the direction of the Dean of the College of Letters and Science.

Linguistics focuses, principally, on the study of the structure of natural languages, and how this structure—syntactic, phonological, semantic—changes through time. From this empirical study, linguistics attempts to extract properties common to all language structure and structural change, and to develop a theory of general grammar. When linguistic structure is viewed more abstractly, it bears a relation to certain mathematical concerns, such as automata theory and Boolean algebra. The study of language with respect to its acquisition and use raises questions pertinent to areas known as socio-linguistics and psycho-linguistics.

PREPARATION FOR THE MAJOR

Linguistics 20.

THE MAJOR

Linguistics 110A & B, 111A & B, 112, 113A, 121, 122, 123; 6-9 units from Semitic 120A, B, C and Linguistics 120A, B, C.

In General Education courses, Linguistics recommends: Philosophy 108, History 106A, B, C; Anthropology 101; Psychology 101, 127; Sociology 101, 136; Biology 20; Physics 8A, B, C, 10; Chemistry 1A, B, C; Mathematics 8, 9, 109, 110, 111A; Philosophy 133.

LINGUISTICS

Lower and Upper Division Courses

20. Language and Linguistics. (3) III.

An introduction to the field and its applications. Synchronic and diachronic linguistics: their goals and methods. Allied fields: psycholinguistics, sociolinguistics. Application of linguistics: speech produc-

tion and perception; mechanical translation; information retrieval; language learning; etc.

110A-B. Introduction to Syntax. (4) I.

An introduction to the description of the syntax of natural languages.

111A-B. Introduction to Phonology. (4) II.

Prerequisite: Linguistics 110 recommended.

Introduction to the description of the sound pattern of natural languages.

112. Introduction to Linguistic Change.

(4) III.

Prerequisite: Linguistics 110 or 111, preferably both.

An introduction to the historical and dialectical study of natural languages.

113A-B. Introduction to Semantics (4-4)

II-III.

Prerequisite: Linguistics 110A or permission of instructor.

Introduction to semantic description of natural language. Consideration of semantic fields, the role of logic and the underlying structure of language. Investigation of presupposition, entailment, synonymy, etc.

115. Mathematical Background for

Linguistics. (4) I.

Deals with mathematical and logical concepts that are fundamental to the formal development of grammatical theory.

120A-B-C. Historical-Comparative

Linguistics. (4-4-4) I, II, III.

Prerequisite: Linguistics 112.

An introduction to the methods of reconstruction in historical and comparative linguistics, as exemplified in one language-family.

121. Linguistic Analysis I. (4) I.

Prerequisite: Linguistics 110 or 111.

Study of the syntax of a non-Indo-European language.

122. Linguistic Analysis II. (4) II.

Prerequisite: Linguistics 121.

Study of the phonology of a non-Indo-European language.

123. Linguistic Analysis III. (4) III.

Prerequisite: Linguistics 122.

Formulation of a grammar based on the findings of the year's work, testing the adequacy of current linguistic theory

165. Language Acquisition (4) II.

Prerequisite: Linguistics 20 or 110A.

The study of how children acquire language, and the problem of detecting and correcting "deviant" linguistic behavior.

194. Group Studies in Linguistics.

(2-3) I, II, III.

Admission by special arrangement.

This course may be repeated with the consent of the department.

A course limited to small groups whose interest and needs will determine the central focus. The meetings—normally 2-3 hours each and averaging at least once a week over the quarter—are not required to be periodic. A research paper is to be submitted by each student at the end of the quarter. Enrollment normally limited to 12 or fewer students.

199. Independent Studies in Linguistics.

(1-5) I, II, III.

Admission by special arrangement.

Intended for the study of special areas within Linguistics. 199 courses are limited to no more than 5 units in one quarter and not more than 12 units total.

Graduate Courses**205. The Description of Language. (3) I.**

Prerequisite: Linguistics 110 (may be taken concomitantly with the instructor's permission).

Concerns of method: induction, intuition; grammatical relatedness; linguistic primes; levels of analysis and their empirical motivation; the structure of grammar.

209. Syntactic Theory. (3) I.

Prerequisite: Linguistics 110A, 110B, or permission of instructor.

Consideration of special topics in the theory of syntax; alternative formalisms; current controversial aspects.

210. Phonological Theory. (3) II.

Prerequisite: Linguistics 111A or 111B or permission of instructor.

Aspects of lexical representation; theories of rule application; distinctive feature analysis and its problems.

211. Formal Models of Language (3) II.

Prerequisites: Linguistics 115; and 205 or 210.

The study of models of language structure and use. The focus is principally on the relation of automata to the notion 'grammar,' but some attention may be given to statistical models of production, perception, and change.

215. Language Change. (3) III.

Prerequisite: Linguistics 205.

Language acquisition in the child; rule ordering and re-ordering; conditions for generalization; types of innovation; constraints on restructuring; lexicon vs. rule; mechanisms of 'drift.'

225. Semantics. (3) II.

Prerequisite: Recommended: Linguistics 205 and 210.

Its place in grammar: relation to syntax; the question of formalism and representation; relation to pragmatics and culture.

230. History of Linguistics. (3) II or III.

Prerequisites: Linguistics 205 and 210.

The role of IE studies of the 19th century; the Prague school; American structuralism; current theories.

594AA-594ZZ. Special Topics. (1-4) I, II, III.

594PH: Special Topics in Phonology.

594SX: Special Topics in Syntax.

594SM: Special Topics in Semantics.

Admission by special arrangement.

595AA-595ZZ. Group Studies (4) I, II, III

595PH: Group Studies in Phonology.

595SX: Group Studies in Syntax.

595SM: Group Studies in Semantics.

Admission by special arrangement.

596AA-596ZZ. Directed Reading and Research (2-4) I, II, III.

596PH: Directed Reading and Research in Phonology.

596SX: Directed Reading and Research in Syntax.

596SM: Directed Reading and Research in Semantics.
Individual Tutorial.

Related Courses in Other Departments

(For details, see departmental listing)

Classics	202	Comparative Grammar of Greek and Latin	Russian	108	The Russian Language
Electrical Engineering	165B	Formal and Programming Languages	Semitic	101	The Structure of the Semitic Languages
English	110	Structure of Modern English	120	Historical Semitic Linguistics	
	111	History of the English Language	Sociology	136	Sociological Linguistics
French	202	Old French Philology	Spanish	28	Introduction to Linguistics
	209	Linguistics	100A-B-C	The Spanish Language: A Linguistic Approach	
German	120	History of the German Language	101A-B	American Spanish	
	202	Gothic	107	Languages in Contact	
	220	History of German Grammar	121A-B	History of the Spanish Language	
Philosophy	133	Philosophy of Language	201A-B-C	Historical Grammar and Old Spanish Readings	
Portuguese	121	History of the Portuguese Language (in English)	209A-B-C	Dialectology	
			Speech	117	Language and Human Behavior
				118	The Limits of Language
				155	Speech Science
				165	The Development of Language

MATHEMATICS

*Thomas K. Boehme, Ph.D., *Professor of Mathematics*.
 Andrew M. Bruckner, Ph.D., *Professor of Mathematics*.
 Jack G. Ceder, Ph.D., *Professor of Mathematics*.
 John A. Ernest, Ph.D., *Professor of Mathematics*.
 Ky Fan, Docteur-es-Sciences Mathématiques, *Professor of Mathematics*.
 Paul J. Kelly, Ph.D., *Professor of Mathematics*.
 Marvin Marcus, Ph.D., *Professor of Mathematics*.
 Henryk Minc, Ph.D., *Professor of Mathematics*.
 David L. Outcalt, Ph.D., *Professor of Mathematics*.
 David A. Sprecher, Ph.D., *Professor of Mathematics (Chairman of the Department)*.
 Robert C. Thompson, Ph.D., *Professor of Mathematics*.
 Lewis F. Walton, Ph.D., *Professor of Mathematics*.
 Max L. Weiss, Ph.D., *Professor of Mathematics*.
 Adil M. Yaqub, Ph.D., *Professor of Mathematics*.
 Charles A. Akemann, Ph.D., *Associate Professor of Mathematics*.
 Seymour Bachmuth, Ph.D., *Associate Professor of Mathematics*.
 Michael J. Cambern, Ph.D., *Associate Professor of Mathematics*.
 Larry J. Gerstein, Ph.D., *Associate Professor of Mathematics*.

* Absent on Leave 1973-74.

Eugene C. Johnsen, Ph.D., *Associate Professor of Mathematics.*

^{1,2}Horace Y. Mochizuki, Ph.D., *Associate Professor of Mathematics.*

Phillip A. Ostrand, Ph.D., *Associate Professor of Mathematics.*

James B. Robertson, Ph.D., *Associate Professor of Mathematics.*

Melvin Rosenfeld, Ph.D., *Associate Professor of Mathematics.*

Stephen Simons, Ph.D., *Associate Professor of Mathematics.*

^{2,3}James M. Sloss, Ph.D., *Associate Professor of Mathematics.*

Raymond Y. Wong, Ph.D., *Associate Professor of Mathematics.*

Dimitri Koutroufiotis, Ph.D., *Assistant Professor of Mathematics.*

Kenneth C. Millett, Ph.D., *Assistant Professor of Mathematics.*

John D. Moore, Ph.D., *Assistant Professor of Mathematics.*

Julian Weissglass, Ph.D., *Assistant Professor of Mathematics.*

^{1,2}Julius M. Zelmanowitz, Ph.D., *Assistant Professor of Mathematics.*

PREPARATION FOR THE MAJOR

The student should have completed two years of algebra and courses in plane geometry and trigonometry in high school. Competence in the following university courses, or their equivalents, is essential for successful upper division study: Mathematics 3A–B–C or 11A–B, 4A–B, 8, 9. At least two quarters of Physics 8A–B is strongly recommended.

Requirements for the Major

A minimum of 40 units of upper division mathematics, not including Mathematics 100A–B–C. Apart from Mathematics 101A and 102A, at least two courses must be in algebra, two in analysis, and one in geometry or topology.

Graduate Preparatory. Students preparing for graduate study in mathematics are advised to complete Mathematics 108A–B in their sophomore year, 111A–B–C and 122A–B in the junior year, and 118A–B–C in the senior year. They are also advised to satisfy the geometry-topology requirement by taking Mathematics 140A–B–C. Students should consult with their faculty adviser in planning their upper division program.

Honors Program. The honor sections of calculus, 3BH, 3CH and 4AH, are intended to select students with exceptional ability and motivation for mathematics. The sequence is intended for students having a strong interest in mathematics. It is designed to provide an enrichment of the regular calculus sequence and also to shorten the time necessary for its completion.

Applied Mathematics Program. The Mathematics Department teaches a wide variety of courses for students wishing to pursue programs emphasizing the applications of mathematics in the physical, biological, or social sciences, computer science, or engineering. Students primarily interested in applied mathematics should take EE 5 or Math. 6 and EE 105 and should complete Mathematics 108A–B in their sophomore year, 104A–B–C in their junior year, and a choice of the following courses in their junior and senior years: 116, 119B–C, 120A–B–C, 122A–B, 123, 128, 132, 134A–B–C, 135A–B–C, 136, 137, 138. Those preparing for graduate work in applied mathematics should take Mathematics 111A–B–C (rather than 136) and 118A–B–C during their junior and senior years.

Students are strongly urged to consult with their adviser in order to select a coherent program of courses in mathematics which will be compatible with their related field of interest.

Computer Science Program. The Mathematics Department administers a Computer Science Major which is described in more detail in this catalog under the heading Computer Science. This major is a broadly based interdepartmental program with basic coursework in mathematics and electrical engineering and further related courses in these and other disciplines tailored to the specific interests of the student in computing.

¹ Absent on Leave Fall 1973.

² Absent on Leave Winter 1974.

³ Absent on Leave Spring 1974.

A student with primary interest in mathematics may prefer a program in applied mathematics (described above) with emphasis on computing.

Teaching Program. Students who intend to teach in secondary schools are advised to add EE 5 or Math 6 to their lower division preparation and EE 105 to their upper division work. Mathematics courses 108A–B and 119A are basic general background, while 101A–B, 102A–B, and 103 form the core of the teacher training program. Appropriate electives are 106, 107, 109, 110, 112A–B, 113, 114, 115, 116. Especially capable students are encouraged to substitute courses from the 111 and 118 sequence in place of 101A–B and 103.

TEACHING CREDENTIALS

Either a major or a minor in Mathematics may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. All students preparing for a standard teaching credential with a specialization in elementary teaching must take Mathematics 100A–B or have a minor in mathematics. For further information concerning teaching credentials, students should confer with designated counselors in the Department of Mathematics and in the Graduate School of Education.

A minor in mathematics has official status only as part of a program of study required for an elementary, secondary, or junior college teaching credential. Plane geometry, trigonometry, and two years of high school algebra are required for admission to a minor in mathematics.

The California State Department of Education specifies that a minor consists of 30 units and that if the major is in a non-academic subject, then 18 of the 30 units must be upper division. However, in order to qualify for a U.C.S.B. recommended credential with a minor in mathematics, a student must include Math 101A, 102A and one course from 101B, 102B and 103 as part of the 30 units.

THE DEGREE OF MASTER OF ARTS

Candidates for admission must present a bachelor's degree with a major in mathematics or the equivalent of such training. Entering students may be appraised by means of examination in addition to the evaluation of their records. Whenever necessary, supplementary course work will be required. The department offers two plans for completing the degree: Plan I, thesis option and Plan II, comprehensive examination option.

Requirements for the Degree

Plan I, Thesis option

1. Completion of 36 units of approved course work. A minimum of 18 units must be taken in graduate mathematics courses. The remaining courses may be selected from upper division or graduate courses in mathematics, or in appropriate related fields with approval of the department. A maximum of 6 units total of Math 596 and/or Math 598 may be applied to the 36 unit requirement.

2. Demonstration of adequate knowledge in linear algebra, modern algebra, real analysis and complex analysis. This requirement may be satisfied by passing Math 108A–B; 111A–B–C; 118A–B–C; and 122A–B with an average grade of at least “B”. Essentially equivalent courses at another college or university will be evaluated by the Graduate Committee.

3. Preparation of an acceptable thesis under the supervision of a faculty member and oral defense of the thesis before a faculty committee. The student and his thesis supervisor must present to the Graduate Committee for its approval a coherent coursework and thesis program about one year before expected graduation.

Plan II, Comprehensive Examination option.

1. Completion of 36 units of approved course work. A minimum of 18 units must be taken in graduate mathematics courses. The remaining courses may be selected from upper division or graduate courses in mathematics, or in appropriate related fields with approval of the department.

2. Passing of comprehensive written examinations in algebra and in analysis.

THE MASTER OF ARTS DEGREE IN APPLIED MATHEMATICS AND COMPUTING SCIENCE

Admission

A candidate must 1. fulfill the scholarship requirements for graduate study; 2. hold a bachelor's degree in mathematics, computing science, physics, or engineering; 3. have had undergraduate course work in matrix algebra, differential equations, advanced calculus and in some area in which mathematics is applied. Evaluation of the candidate's past work will be made by the Mathematics Department and supplemental undergraduate courses will be required when necessary.

Requirements for the Degree

A candidate is required to complete 36 units of course work after the bachelor's degree. Nine of these units must be in graduate pure mathematics, 9 must be in graduate applied mathematics or graduate subjects in which mathematics is applied (e.g., physics, engineering, etc.). A candidate is also required to pass either the analysis or the algebra examination administered regularly by the Mathematics Department. In addition the candidate is required to either 1. take an oral examination on some special topic, or 2. to write a thesis on some topic in an applied field. Persons interested in this program should contact the applied mathematics adviser as soon as possible.

DOCTORAL PROGRAM

A student advances to candidacy for the degree of Doctor of Philosophy in mathematics after having passed an oral examination. Prior to this, he must have passed a series of written qualifying examinations and have shown proficiency in two foreign languages, normally chosen from French, German, and Russian.

Information about the written qualifying examinations and specific areas of specialization for the doctoral dissertation can be obtained from the department.

MATHEMATICS

Lower Division Courses

Most lower division classes have laboratories. Students are required to schedule their classes to leave at least two lab hours free for each such class.

1. College Algebra. (4) I, II, III. The Staff

Prerequisite: None.

An introductory course intended to provide a general background in algebra. Also serves as preparation for more advanced courses, e.g., Math 3A, 11A, 34A, for students requiring such preparation. Students who are uncertain about what courses to enroll in are strongly advised to take the placement exam in mathematics during Registration Week.

Numbers and sets, algebraic manipulation, inequalities, functions and graphing, polynomials and the quadratic formula, systems of linear equations, linear programming, elementary combinatorics and probability.

2. The Elementary Functions: Logarithms, Exponentials and Trigonometry.

(4) II, III.

The Staff

Prerequisite: None.

An introductory course intended to provide a general background in the exponential, logarithmic and trigonometric functions.

Exponential and logarithmic functions, analytic

geometry of lines and circles, geometric description of trigonometric functions, inverse trigonometric functions, trigonometric form of complex numbers, circular functions and their graphs, elementary trigonometric identities, use of trigonometric tables, solution of triangles.

3A. Analytic Geometry and Calculus, First

Course. (4) I, II, III.

The Staff

Prerequisite: Math 1 or 1½ years of high school algebra and trigonometry.

Introductory analytic geometry, limits, continuity, differentiation.

3B. Analytic Geometry and Calculus, Second

Course. (4) I, II, III.

The Staff

Prerequisite: Mathematics 3A.

The definite integral; logarithmic, exponential, and trigonometric functions.

3BH. Analytic Geometry and Calculus

(Honors), Second Course. (4) II.

Prerequisite: Mathematics 3A.

The Staff

More intensive study of the topics in Mathematics 3B.

3C. Analytic Geometry and Calculus, Third

Course. (4) I, II, III.

The Staff

Prerequisite: Mathematics 3B.

Techniques of integration, polar coordinates, infinite series.

3CH. Analytic Geometry and Calculus

(Honors), Third Course. (4) III.

Prerequisite: Mathematics 3B.

The Staff

More intensive study of the topics in Mathematics 3C.

4A. Analytic Geometry and Calculus, Fourth Course. (4) I, II, III.

The Staff

Prerequisite: Mathematics 3C.

Vector algebra, partial derivatives, Lagrange multipliers, chain rule.

4AH. Analytic Geometry and Calculus.

(Honors), Fourth Course. (4) I. The Staff

Prerequisite: Mathematics 3CH.

Continuation of Mathematics 3BH and 3CH.

4B. Analytic Geometry and Calculus, Fifth Course. (4) I, II, III.

The Staff

Prerequisite: Mathematics 4A.

Multiple integrals, line and surface integrals, Green's Theorem, Stokes' Theorem, divergence theorem.

5A. Calculus for Science and Engineering Students. (4) I.

The Staff

Prerequisite: Mathematics 3C.

Intended for majors in physical sciences and engineering. First and second order linear differential equations, series solutions, Laplace transforms.

5B. Calculus for Science and Engineering Students. (4) II.

The Staff

Prerequisite: Mathematics 5A.

This course covers the material in Math. 4A for students of physical sciences and engineering. Emphasis on problems and computation.

5C. Calculus for Science and Engineering Students. (3) III.

The Staff

Prerequisite: Mathematics 5B.

This course covers the material of Math. 4B specifically for students of physical sciences and engineering. Does not include a discussion section.

6. Computer Applications for Calculus. (4)

I, II, III.

The Staff

Prerequisite: Consent of instructor.

The mathematical theory behind various algorithms used for root finding, numerical integration and the numerical solutions of first order ordinary differential equations including analysis of error. The student will learn elementary Fortran programming and will use the computer to perform these algorithms.

8. Introduction to Modern Algebra. (4) I, II, III.

The Staff

Prerequisite: 1½ years of high school algebra.

Topics include: principle of induction, integers, integers modulo n , elementary number theory, division and Euclidean algorithms, prime factorization, complex numbers, polynomial rings and properties of polynomials, theory of equations, permutations.

9. Elementary Linear Algebra. (4) I, II, III.

The Staff

Prerequisite: 1½ years of high school algebra.

Intended for majors and non-majors. Topics include vector spaces, linear transformations, vector operations, matrix operations, solutions of systems of

linear equations, determinants, characteristic roots and vectors. Emphasis upon computational skills.

10. Mathematics for the Biological and Social Sciences. (4) I, II, III.

The Staff

Prerequisite: None.

Intended for students with a need for general background in mathematics. Emphasizes computational skills and ideas. Open to students with no training in mathematics beyond high school.

Numbers, scientific notation, significant figures, approximate equality, rational powers, algebraic manipulation, the quadratic formula, summation, expected value, standard deviation, round off and truncation, propagation of error, manipulating large and small numbers, inequalities, coordinates, straight lines, linearization of data, least square method, use of tables, logarithms, growth and decay, flow charts, desk calculators.

11A-B. Calculus. (4-4) I, II.

The Staff

Prerequisites: 1½ years of high school algebra, trigonometry, and analytic geometry.

Course covers the material in Mathematics 3A-B-C for students who have studied analytic geometry.

12. Mathematics of Finance. (4) I, II, III.

Prerequisite: None.

The Staff

Intended for students with a desire for a general background in the mathematics of finance. Emphasizes basic techniques and computational skills. Open to students with no training in mathematics beyond high school. Recommended for students interested in business, managerial science, or actuarial mathematics, and for students majoring in economics.

Simple interest, compound interest, equations of equivalence, simple annuities, ordinary general annuities, amortization and sinking funds, perpetuities.

13. Mathematics Appreciation. (3) I, II, III.

Prerequisite: None.

The Staff

A course intended to give general students a better understanding of the nature of mathematics, the character and origin of different subject fields in mathematics, and the source of mathematical research.

30A. Finite Mathematics. (4) I, II, III.

The Staff

Prerequisite: 1½ years of high school algebra.

Finite problems having applications in the behavioral sciences. Compound statements, sets, combinatorial problems, probability, vectors, matrices. Not open to mathematics majors or students who have passed Math 8.

30B. Finite Mathematics. (4) II, III.

The Staff

Prerequisite: Mathematics 30A.

Systems of linear equations, linear programming, convex geometry, game theory, and Markov chains.

33. Statistics. (4) I, II, III.

The Staff

Prerequisite: None.

Random variables, sampling distribution, estimation, tests by hypotheses, correlation and regression.

34A. Introduction to Calculus and Statistics. (4) I, II.

The Staff

Prerequisite: 1½ years of high school algebra.

Calculus of one variable including differentiation, curve sketching, max-min problems, exponential and logarithm functions, integration, improper integrals.

34B. Introduction to Calculus and Statistics.

(4) II, III. The Staff

Prerequisite: Math. 34A.

Techniques of integration, calculus of several variables including partial derivatives and Lagrange multipliers, separable differential equations, probability including independence, expectation, mean and variance, Chebyshev's inequality, conditional probability and regression.

34C. Introduction to Calculus and Statistics.

(4) I, III. The Staff

Prerequisite: Math. 34B.

Estimation, confidence intervals, testing hypotheses including the t test and χ^2 goodness of fit test. Additional statistical procedures.

94. Group Studies in Mathematics. (1-4)

I, II, III. The Staff

Prerequisite: Consent of the instructor.

Lectures and discussions on special topics.

Upper Division Courses**100A-B. Mathematics for Elementary**

Teaching. (3-3) I-II, II-III. The Staff

Prerequisites: High school algebra and geometry.

Designed for candidates for the elementary teaching credential. Not open to mathematics majors. Numeration systems, properties of sets, structure of the real number system and its subsystems, mathematical justification of computational procedures, division algorithm, congruences, elements of geometry.

100C. Mathematics for Elementary

Teaching. (3) III. The Staff

Prerequisite: Math 100A-B.

Designed to supplement Math 100A-B. Further study of the real number system and its subsystems including elementary number theory and decimal representation. Additional topics from geometry, logic and algebra.

101A. Classical Number Systems. (4) I.

Prerequisite: Mathematics 3C or 34B. The Staff

Especially suitable for prospective teachers. A conceptual rather than an axiomatic development starting with the natural numbers and progressing through the integral, rational, real, and complex number systems, treating the basic properties of each. (Not open to those who have passed 118A.)

101B. Elementary Real Analysis. (4) II.

Prerequisite: Mathematics 101A. The Staff

Especially suitable for prospective teachers. Basic theory of real valued functions of a single real variable, limits, continuity, sequential convergence, differentiation, integration, fundamental theorem of calculus. (Not open to those who have passed 118A.)

102A. Modern Elementary Geometry.

(4) II. The Staff

Prerequisite: Mathematics 3B or 34A.

Especially suitable for prospective teachers. Foundational properties of Euclidean 3-space from the Birkhoff axioms. Surveys of concepts new to the traditional secondary course, elements of convex body theory, motions and similarities.

102B. Transformation Geometry. (4) III.

The Staff

Prerequisite: Mathematics 9, 102A, or 108A, or consent of the instructor.

Especially suitable for prospective teachers. Formulation of the theory in 102A in vector and matrix terms with an emphasis upon group properties and with extensions to n dimensions. Discussion of affine, projective, and topological mappings with examples of related invariants.

103. Introduction to Group Theory. (4) III.

Prerequisite: Mathematics 8. The Staff

Not open to students who have taken Mathematics 111A.

Intended primarily for prospective teachers. Permutation groups, cyclic groups, theory of finite groups, group homomorphisms and isomorphisms, Abelian groups. Applications to number theory and geometry.

104A. Numerical Methods by Approximation.

(4) I. The Staff

Prerequisite: Mathematics 4B (may be taken concurrently).

Properties of polynomials, polynomial approximation, orthogonal polynomials, numerical differentiation and integration, Tchebycheff and Legendre polynomials.

104AL. Laboratory in Numerical Analysis.

(1) I. The Staff

Prerequisite: Simultaneous enrollment in Mathematics 104A.

Instruction in the use of the on-line computer as a means of solving problems from Math. 104A.

104B. Numerical Methods in Differential

Equations. (4) II. The Staff

Prerequisites: Mathematics 104A and 119A.

Numerical solution of initial value and two point boundary value problems of ordinary differential equations. Systems of equations, higher order and non-linear equations.

104BL. Laboratory in Numerical Analysis. (1)

II. The Staff

Prerequisite: Simultaneous enrollment in Math. 104B.

Instruction in the use of the on-line computer as a means of solving problems from Math. 104B.

104C. Numerical Methods in Algebraic

Problems. (4) III. The Staff

Prerequisite: Mathematics 108A.

Spectral theory of finite matrices. Direct and iterative methods for inverting matrices and solving linear equations. Various methods for obtaining characteristic values and vectors of matrices. Numerical solution of systems of non-linear equations.

104CL. Laboratory in Numerical Analysis.

(1) III. The Staff

Prerequisite: Simultaneous enrollment in Math. 104C.

Instruction in the use of the on-line computer as a means of solving problems from Math. 104C.

106. Number Systems of Algebra. (4) III.

The Staff

Prerequisite: Mathematics 8 or consent of instructor.

Brief review of the integral, real, and complex number systems, development of p-adic numbers, algebraic integers, quaternions, Cayley numbers, extension fields of rationals.

107. Discrete Probability Theory. (4) III.

The Staff

Prerequisite: None.

A systematic development of probability theory for finite sample spaces, conditional probability, independence, counting techniques, binomial distribution, random variables, expectation, and other topics such as Markov chains, Poisson distributions and hypothetical testing.

108A-B. Introduction to Linear Algebra.

(4-4) I-II, II-III,

The Staff

Prerequisite: Mathematics 8.

Vector spaces and linear transformations, matrix algebra, linear equations, determinants, characteristic roots, normal matrices, matrix inequalities.

109. Foundations of Mathematics. (4) II.

The Staff

Prerequisite: Mathematics 8.

Introduction to symbolic logic, theory of formal proof, axiom systems, consistency and completeness.

110. Set Theory. (4) III.

The Staff

Prerequisite: None.

Fundamentals of set theory, ordinal numbers, cardinal arithmetic, transfinite methods.

111A-B-C. Introduction to Abstract Algebra.

(4-4-4) Yr.

The Staff

Prerequisites: Mathematics 8 and 108A or consent of instructor.

Groups, rings, fields, elementary divisors.

112A-B. Projective Geometry. (4-4) I-II.

The Staff

Prerequisite: Mathematics 4A.

One- and two-dimensional analytic projective geometry.

113. Non-Euclidean Geometry. (4) I.

The Staff

Prerequisite: Mathematics 4A or consent of instructor.

Primarily an introduction to hyperbolic geometry with some discussion of other non-Euclidean systems.

114. Convex Figures. (4) III.

The Staff

Prerequisite: Mathematics 4A and 9 or 108A, or consent of instructor.

Introduction to theory of convex bodies, primarily in two dimensions.

115. Number Theory. (4) I.

The Staff

Prerequisites: Mathematics 4A and 8.

Topics include: number bases, factorization, Diophantine equations, congruences, residues, numerical functions, distribution of primes.

116. Combinatorial Mathematics. (4) III.

The Staff

Prerequisite: Mathematics 4B and 9, or consent of instructor.

Combinatorial problems in analysis, algebra, geometry, and topology.

118A-B-C. Introduction to Real Analysis.

(4-4-4) Yr.

The Staff

Prerequisite: Senior standing is recommended.

The real number system, elements of set theory, continuity, differentiability, the Riemann integral, functions of bounded variation, implicit function theorems, convergence processes, special topics.

119A. Differential Equations. (4) I, II, III.

The Staff

Prerequisite: Mathematics 4B (may be taken concurrently).

First and second order linear differential equations, linear equations with constant coefficients, series solutions, method of undetermined coefficients, Laplace transform.

119B. Differential Equations. (4) II. The Staff

Prerequisite: Mathematics 119A.

Existence and uniqueness by successive approximations, solutions of systems of differential equations by vector methods, regular singular points, series solutions, special functions, boundary value problems.

119C. Differential Equations. (4) III

Prerequisite: Mathematics 119B.

The Staff

Autonomous systems, phase plane, equations with periodic coefficients, stability, Lyapunov method, limit cycles.

120A-B-C. Probability and Statistics.

(4-4-4) Yr.

The Staff

Prerequisite: Mathematics 4B.

Basic concepts of probability, limit theorems, discrete and continuous random variables, derived distributions, some statistical applications. Point estimation, random sampling, tests of hypotheses, confidence intervals.

122A-B. Introduction to Theory of Complex Variables. (4-4) I-II, II-III.

The Staff

Prerequisite: Mathematics 4B.

Complex numbers, functions, differentiability, series, extensions of elementary functions, complex integration, calculus of residues, conformal maps, mapping functions, applications.

123. Partial Differential Equations

(4) III.

The Staff

Prerequisite: Mathematics 119A.

Derivation of equations. Eigenfunction expansions, separation of variables. Integral transforms, types of partial differential equations. Green's and Riemann's functions.

124A-B-C. Topics in Applied Mathematics.

(3-3-3) Yr.

The Staff

Prerequisite: Mathematics 5C.

For majors in the physical sciences or engineering; not for credit toward the mathematics major without special permission. Fourier series, Laplace transform, partial differential equations, boundary value problems, Fourier transform, topics in complex analysis.

126A-B-C. General Topology. (4-4-4) Yr.

The Staff

Prerequisite: Mathematics 4B or consent of instructor.

Set theory, basic notions of topological spaces,

continuous maps and homeomorphisms, compactness, product spaces, metric spaces, filters and nets, special topics.

128. Operational Calculus. (4) III. The Staff
Prerequisite: Mathematics 122A.

Fourier and Laplace transforms. Parseval's theorem, convolution theorem, inversion formulas, Paley-Wiener theorem and applications.

132. Game Theory and Linear Programming. (4) III. The Staff

Prerequisite: Mathematics 9 or 108A.
Convex geometry of Euclidean spaces, separation theorems, matrix games, linear inequalities, linear programming, the simplex method.

134A-B-C. Fourier Transforms and Fourier Series. (4-4-4) YR. The Staff

Prerequisite: Mathematics 5A-B-C or Mathematics 119A.

Basic theorems of Fourier analysis. Convolution. The delta function. Applications to statistics, applications to sampling and series. The second quarter involves computer applications and requires a working knowledge of a computing language.

135A-B-C. Approximation Theory. (4-4-4) Yr. The Staff

Prerequisites: Mathematics 3A-B-C, 8, 9 or 108A-B.

The Weierstrass approximation theorems; linear approximation (Chebyshev theorems, Chebyshev polynomials); algorithms, least square approximation; approximation by linear operators; interpolation of functions; rational approximation; spline-interpolation. Special topics.

136. Applied Algebra. (4) I. The Staff

Prerequisite: Mathematics 9 or equivalent. Not open to students who have had Mathematics 111B.
Sets, mappings, binary relations, elementary combinatorics, groups, rings, fields.

137. Graph and Network Theory. (4) II. The Staff

Prerequisite: Mathematics 9 or equivalent.
Graphs, transport networks, applications to optimization.

138. Algebraic Coding Theory. (4) III. The Staff

Prerequisite: Mathematics 136 or 111A-B.
Theory and construction of error correcting codes.

140A-B-C. Introduction to Topology and Differential Geometry. (4-4-4) Yr. The Staff

Prerequisites: Mathematics 4B and 108A.

Topological spaces, continuity, compactness, connectedness, product spaces, metric spaces, homotopy, fundamental group and covering spaces. Differentiable manifolds, tangent vectors, differential forms, orientability, Stokes Theorem. Theory of curves and surfaces in Euclidean space, Riemannian geometry on two dimensional manifolds, Gauss-Bonnet Theorem.

141. Multilinear Algebra. (4) III. The Staff

Prerequisite: Mathematics 108B.

Duality, multilinear mappings, tensor spaces, sym-

metry classes, graded algebras, linear transformations on tensor spaces, induced transformations, inner products on tensor spaces, elementary representation theory.

190A-B-C. Special Topics in Mathematics. (4-4-4) Yr. The Staff

Prerequisite: Consent of instructor.
Information about the special topics to be presented may be obtained from the office of the Department of Mathematics.

194. Group Studies for Advanced Students. (1-4) I, II, III. The Staff

Prerequisite: Consent of instructor.
Lectures and discussions on special topics.
Enrollment normally limited to 12 or fewer students.

199AA-ZZ. Independent Studies in Mathematics. (1-5) I, II, III. The Staff

199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses

200A-B-C. Real and Complex Analysis. (4-4-4) Yr. The Staff

Prerequisite: Mathematics 118A-B-C, or equivalent.

Real and complex analysis, measure theory, and rudiments of functional analysis.

201A-B-C. Measure and Integration. (3-3-3) Yr. The Staff

Prerequisite: Mathematics 118A-B-C or equivalent.

Abstract measures and outer measures, completion of measures, measurable functions, integration, convergence theory, Fubini's theorem, signed measures, measures on locally compact spaces, special topics.

202A-B-C. Complex Variables. (3-3-3) Yr. The Staff

Prerequisite: Mathematics 118A-B-C or equivalent.

Holomorphic functions, Cauchy integral theorems, Taylor and Laurent series, analytic continuation, conformal mapping, residue theory, and special topics.

204A-B-C. Advanced Numerical Analysis. (3-3-3) Yr. The Staff

Prerequisites: Math 104A-B-C, or Math 108A, 118A, 119A, or consent of instructor.

Topics from: Numerical treatment of partial differential equations, elliptic boundary value problems, hyperbolic and parabolic equations, Stability, error estimates and accelerated convergence. Numerical treatment of integral equations. Variational techniques. Newton method applied to operator equations. Monotone operators.

209. Set Theory. (3) I. The Staff

Prerequisite: Consent of instructor.
A rigorous study of axiomatic set theory; topics include ordinal numbers, transfinite induction, cardinal numbers, cardinal arithmetic, and the Axiom of Choice.

210A-B-C. Advanced Topics in the Theory of Real Functions. (3-3-3) Yr. The Staff

Prerequisite: Mathematics 200A-B-C.

Special topics chosen by the instructor. Topics may include: the integrals of Perron, Denjoy, Khintchine and others; the Baire classification of functions and the Borel classification of sets; the measure problem, density theorems, negligible sets, and functions of several real variables.

211A-B-C. Advanced Topics in Complex Variables. (3-3-3) Yr. The Staff

Prerequisites: Consent of Instructor.

Special topics chosen by the instructor. Possible topics include: several complex variables; Riemann surfaces; potential theory; H^p spaces; entire and meromorphic functions; cluster sets; conformal mappings.

212A-B. Projective Metric Geometry. (3-3) I-II. The Staff

Prerequisite: Mathematics 112A-B.

A study of metric spaces which can be imbedded in a projective space so that the metric lines are carried by the projective lines; included are two and three dimensional non-Euclidean geometries.

213A-B-C. Probability Theory. (3-3-3) Yr. The Staff

Prerequisite: Mathematics 120A-B-C or equivalent, or Mathematics 201A (may be taken concurrently), or consent of the instructor.

Foundations of probability, distribution functions, characteristic functions, stochastic processes, central limit problem, martingales, stationary processes.

214A-B-C. Introduction to Stochastic Processes. (3-3-3) Yr. The Staff

Prerequisites: Mathematics 118A-B, 120A-B-C.

Random walks, renewal theory, Markov processes, branching processes, information theory.

218A-B-C. Combinatorial Mathematics. (3-3-3) Yr. The Staff

Prerequisites: Mathematics 108A-B and 111A-B.

Principle of inclusion and exclusion, recurrence relations, Ramsey's theorem, Polya's theorem, partially ordered sets, Möbius functions, arrangements with restrictions, systems of distinct representatives, Latin squares and rectangles, block designs, finite geometries, Hadamard matrices, difference sets, (0,1) matrix theory, extremal problems.

220A. Modern Algebra. (3) I. The Staff

Prerequisites: Mathematics 108A-B, 111A-B.

Group theory.

220B. Modern Algebra. (3) II. The Staff

Prerequisite: Mathematics 108A-B, 111A-B.

Ring theory.

220C. Modern Algebra. (3) III. The Staff

Prerequisite: Mathematics 220A.

Field theory and Galois theory.

221A-B-C. Topics in Field Theory. (3-3-3) Yr. The Staff

Prerequisite: Consent of instructor.

222A-B-C. Topics in Group Theory. (3-3-3) Yr. The Staff

Prerequisite: Consent of instructor.

223A-B-C. Topics in Ring Theory. (3-3-3) Yr. The Staff

Prerequisite: Consent of instructor.

224A-B-C. Topics in Linear Algebra. (3-3-3) Yr. The Staff

Prerequisite: Consent of instructor.

225A-B-C. Topics in Number Theory. (3-3-3) Yr. The Staff

Prerequisite: Consent of instructor.

Selected topics in number theory.

226A-B-C. General Topology. (3-3-3) Yr. The Staff

Prerequisite: Mathematics 118A or equivalent.

Topological spaces and continuous functions. Filters and convergence. Compactness. Connectedness. Product and quotient spaces, direct and inverse limits. Metric spaces. Completion and compactification. Normal spaces. Paracompactness and metrization. Baire category. Function spaces.

Special topics (retracts, homotopy, maps into spheres, covering spaces, fibre spaces).

227A-B-C. Advanced Topics in Geometric and Algebraic Topology (3-3-3) Yr. The Staff

Prerequisite: Consent of the instructor.

Topics, varying from year to year, include piecewise linear and differential topology, manifolds, fiber bundles and fiber spaces, homotopy theory, and spectral sequences.

228A-B-C. Functional Analysis. (3-3-3) Yr. The Staff

Prerequisite: Mathematics 201A-B, 226A-B.

Linear topological spaces. Hilbert spaces, Banach spaces, locally convex spaces, Banach algebras. Special topics.

229A-B-C. Hilbert Space. (3-3-3) Yr. The Staff

Prerequisite: Mathematics 200A-B-C.

Geometry, operator theory, algebras of operators.

230A-B-C. Topological Groups. (3-3-3) Yr. The Staff

Prerequisites: Mathematics 220A, 226A-B-C.

General properties of topological groups. Unitary representations of compact groups. Duality and structure of locally compact Abelian groups. Haar measure. Unitary representations of locally compact groups. Harmonic analysis. Special topics.

231A-B-C. Topological Vector Spaces. (3-3-3) Yr. The Staff

Prerequisites: Mathematics 200A-B-C, 226A-B-C.

Topologic-geometric properties. Weak compactness. Integral representations of compact convex sets. Choquet boundary, simplexes. Barreled spaces. Bornological spaces. Frechet spaces. Montel spaces. Nuclear spaces. Ordered topological vector spaces. Functional representations. Positive operators. Special topics.

232A-B-C. Algebraic Topology. (3-3-3) Yr.**The Staff**

Prerequisites: Mathematics 220A-B-C, 226A-B-C.

Homotopy groups. Fiber spaces. Singular and simplicial homology. Cohomology. Products. Duality theorems.

239A-B-C. Nonassociative Algebra.**(3-3-3) Yr.****The Staff**

Prerequisite: Mathematics 220A-B-C.

Associative, Lie, and Jordan algebras. Alternative rings. Generalizations.

240A-B-C. Differential Geometry. (3-3-3)**Yr.****The Staff**

Prerequisites: Mathematics 140A-B, 200A-B-C. Differential manifolds, tangent vectors, differential forms, vector bundles. Riemannian geometry. Geodesics, minimal submanifolds, first and second variation of arc length. Special topics.

243A-B-C. Ordinary Differential Equations.**(3-3-3) Yr.****The Staff**

Prerequisite: Consent of instructor.

Ordinary differential equations in real and complex domains. Existence and differentiability of solutions. Analysis of singular points. Poincaré-Bendixson theorem, perturbation theory, Sturm-Liouville theory, asymptotic expansions, stability.

245A-B-C. Differential Equations and Operator Theory for Physical Sciences.**(3-3-3) Yr.****The Staff**

Prerequisite: Mathematics 118A or consent of instructor.

Linear spaces, spectral theory of operators, Green's functions, eigenvalues of ordinary differential equations, partial differential equations.

246A-B-C. Partial Differential Equations.**(3-3-3) Yr.****The Staff**

Prerequisite: Mathematics 118A or consent of instructor.

Cauchy-Kowaleski theorem. Characteristics. Theory of initial value and boundary value problems for elliptic, hyperbolic and parabolic equations. Existence of uniqueness of solutions.

260. Seminars in Mathematics. (1-6) I, II, III.**The Staff**

Prerequisite: Consent of instructor.

Topics in analysis, geometry, algebra, functional analysis, topology, and applications, by means of lectures and informal conferences with members of staff. May be repeated for credit.

270A-B-C. Special Topics in Algebra.**(3-3-3) Yr.****The Staff**

Prerequisite: B.A. or B.S., with mathematics major, or consent of instructor.

Intended for students working for Junior College Credential or M.A. in Education with mathematics emphasis. Particular consideration of the relation of special and advanced topics to the junior college and secondary curriculum.

271A-B-C. Special Topics in Geometry**and Analysis. (3-3-3) Yr.****The Staff**

Prerequisite: B.A. or B.S., with mathematics major, or consent of instructor.

Intended for students working toward a Junior College credential or M.A. in Education with mathematics emphasis. Particular consideration of the relation of special and advanced topics to the junior college and secondary curriculum.

280. Surveys in Contemporary Mathematics.**(3) I, II, III.****The Staff**

Prerequisite: Consent of instructor.

An expository treatment of a topic of current interest in mathematics with sufficient detail to impart the flavor of the field. Where appropriate, applications to other fields of mathematics will be included. The course is designed for the nonspecialist in the area treated. The topics will vary from quarter to quarter.

Math 596AA-596ZZ. Directed Reading & Research. (1-6) I, II, III.**Math 598AA-ZZ. Master's Thesis Research and Preparation. (1-6) I, II, III.****Math 599AA-599ZZ. Ph.D. Dissertation Preparation. (1-6) I, II, III.****MEDIEVAL STUDIES***Advisory Committee**Theodor Göllner, Ph.D., Professor of Music.**C. Warren Hollister, Ph.D., Professor of History.**John T. Waterman, Ph.D., Professor of German (Chairman, Department of Germanic and Slavic Languages and Literatures).**Alva W. Bennett, Ph.D., Associate Professor of Classics (Chairman, Department of Classics).**Walter H. Capps, Ph.D., Associate Professor of Religious Studies (Director, Institute of Religious Studies).**Frank C. Gardiner, Ph.D., Associate Professor of English (Chairman, Department of English).**Larry W. Ayres, Ph.D., Assistant Professor of Art.**Alfredo A. Bonadeo, Ph.D., Assistant Professor of Italian.**John R. Elliott, Ph.D., Assistant Professor of English.**Anne K. Lehman, Ph.D., Assistant Professor of English (Chairman of the Committee).**Torborg L. Lundell, Ph.D., Assistant Professor of Swedish.**Donald Maddox, Ph.D., Assistant Professor of French.*

Joan M. Reitzel, Ph.D., *Assistant Professor of History.*

Harvey L. Sharrer, Ph.D., *Assistant Professor of Spanish and Portuguese.*

Frank Tobin, Ph.D., *Assisant Professor of German.*



Robert A. Potter, Ph.D., *Lecturer in Dramatic Art.*

The Major in Medieval Studies is designed to allow for a variety of approaches to the study of medieval civilization. Courses are available in art history, drama, English and other literatures as well as comparative literature, history, music, and religious studies. Emphasis varies in individual programs, but the basic goal is to achieve as clear and full an undertaking as possible of the culture of medieval Europe. By developing a broadly based understanding of medieval culture, which represents a civilization remote from our own yet related to it, we can hope to attain clearer perspectives on our own age.

The program is intended to serve students interested in an undergraduate liberal arts major as well as those who plan to pursue graduate studies in the field. In consultation with members of the committee, students will set up individual programs structured around their special interests. Students should maintain close contact with their advisers in order to inform themselves concerning courses in which content varies and extra-curricular lectures and discussions in the medieval field.

PREPARATION FOR THE MAJOR

A reading knowledge of Latin or a modern European language as determined by the student and his adviser. Latin will be necessary for those who plan to continue their studies on the graduate level.

History 4A-B

THE MAJOR

Forty units from the following list, the selection to consist of related courses forming a coherent program and to be approved by a member of the Advisory Committee.

Art 153A, B, C, D, E, 155B

Comparative Literature 120

Dramatic Art 160B

English 111, 115, 142, 152A, B, 156, 197*

French 109A, 136A, B, C, 137X, 138X

German 115A, 120, 121, Scandinavian 139A

History 113B, 113Q, 115, 115Q, 116, 117A, B, Q, 119, 120A, 145A, B, 150A, 155A, 195*

Italian 106A, 110A, B, C, 111A, B, C, 114X, Y, Z, 116X, 139X

Latin 106, 111, 116, 117, 132, 133

Medieval Studies 100

Music 112A, 148, 179

Philosophy 152A, 157

Political Science 187

Religious Studies 100A, 115, 116, 117, 121, 122, 125, 135, 187

Spanish 115A, 119A, 121A, 122A, B, 123A, B, 183,* 198*

Portuguese 105A, 121, 125A

Tutorial Colloquium,* and/or Tutorial 100,* (up to 16 units), 199*

Upper Division Course

100. Aspects of Medieval Civilization. (4)

I, II, or III.

The Staff

An interdisciplinary course which examines a cultural whole: the political and intellectual history,

the literature, the art and architecture of a given center of medieval civilization (e.g., pre-conquest England or the court of Charlemagne). Topics will vary and the course may be repeated for credit.

* Course content varies; applies only where appropriate to Medieval Studies.

MIDDLE EASTERN STUDIES

Committee in Charge

David S. Gebhard, Ph.D., *Professor of Art.*

Robert Hetzron, Ph.D., *Associate Professor of Hebrew.*

George M. Haddad, Ph.D., *Professor of History (Chairman of the Committee).*

Charles Wendell, Ph.D., *Lecturer in Arabic.*

INTERDEPARTMENTAL MAJOR

The major in Middle Eastern Studies is an interdepartmental major designed for students who wish to pursue graduate study in this area or professional careers that require residence in, or knowledge of the Middle Eastern countries. It is also intended to serve the needs of those who desire a general education with special emphasis on this important area.

The selection of the courses should be made by the student in consultation with the committee in charge on the basis of the needs and objectives of the individual student.

PREPARATION FOR THE MAJOR

Students majoring in Middle Eastern Studies must take five quarters (20 units) in one of the languages of the area. This requirement can be satisfied at the present by either Arabic 1, 2, 3, 4, 5, or Hebrew 1, 2, 3, 115AB. Students who have taken intensive language courses elsewhere and can demonstrate an equivalent level of competence, as judged by the committee in charge, may waive this requirement.

In addition, the student is required to take eight units of lower division work selected from the following: History 46, Art 6A, Political Science 45.

THE MAJOR

Forty units of upper division courses must be selected from the following: Anthropology 140, 156, Art 152A,B, 165B, Arabic 110, 199, Hebrew 110, 115A,B,C (not to be counted for students who took this in preparation for the major), 120A-B-C, 199, Semitic Languages 120A-B-C, History 110, 145A-B, 146A-B, 195, Political Science 147, 196, Religious Studies 115, 116, 117, 119, 130, 131, 132, 134, 140A-B-C, 194A or B.

In selecting the forty units, every major must take (from the preceding list) four units of anthropology, four units of history, four units of Arabic or Hebrew literature, four units of religious studies, and a senior seminar. (History 195 or Political Science 196 or Religious Studies 197A or B).

MILITARY SCIENCE

George F. Otte, Jr., M.A., Colonel, Armor, *Professor of Military Science (Chairman of the Department).*

Richard G. Fuller, M.A., Lt. Colonel, Armor, *Associate Professor of Military Science.*

George H. Wilkins, III, M.A., Major, Infantry, *Associate Professor of Military Science.*

Wesley B. Taylor, Jr., B.S., Captain, Infantry, *Assistant Professor of Military Science.*

David F. Rathje, B.A., Captain, Armor, *Assistant Professor of Military Science.*

The department offers a general Military Science curriculum designed to conform to the academic pattern of the Santa Barbara campus. Military Science classes are open to all students with the consent of the instructor.

The Military Science curriculum is a part of the Army Reserve Officers Training Corps (ROTC) program which leads to a commission as a second lieutenant in the U. S. Army. Enrollment in the ROTC program is on a voluntary basis, and is limited to qualified male students. Attendance at Leadership Laboratory is required for all ROTC students in addition to enrollment in Military Science courses.

The Army ROTC program is divided into two parts: (1) two years of lower division subjects, or Basic Course, to prepare the student for advanced instruction and (2) two years of upper division work, or Advanced Course, for selected male students. Satisfactory completion of Advanced Course and graduation from the university lead to a commission as a second lieutenant in the U. S. Army Reserve; distinguished students may qualify for a commission in the Regular Army.

Transfer students and others who did not take the Basic Course may receive equivalent ROTC credit for these classes by attending a six-week summer camp at a designated Army installation in the summer between their sophomore and junior year. Successful completion of this camp will qualify the student for direct entry into the Advanced Course. Attendees at this six-week summer camp are given an allowance for travel expenses and are paid for their period of camp attendance.

Admission to the upper division Advanced Course is limited to selected male students who meet all academic and physical requirements. Enrollees in this course must execute a contract with the U. S. Army agreeing to complete the course and accept a commission, if one is offered. In return, the student receives a 1D draft deferment and a cash payment of \$100 per month for each school month he is enrolled in the program. Upon completion of the Advanced Course and graduation from the university the student is commissioned as a second lieutenant in one of the branches or arms of the U. S. Army. In so far as possible, the student's desires and academic major will be considered by the Army when making branch assignments.

Students selected for the advanced ROTC will attend a six-week summer camp between their junior and senior years. Attendees at this camp are given an allowance for travel expenses and are paid for their period of camp attendance. Additionally, the advanced ROTC student must in both the junior and senior year take a course of at least three units in one of the following fields: Effective Communications; Science Comprehension; General Psychology; Political Development and Political Institutions.

Scholarship Program. Army ROTC Scholarships are available for various terms to selected applicants. These scholarships pay all costs for tuition, books, and other student fees, and \$100 per month cash to the student. Full 4-year scholarships are offered to high school seniors selected by nationwide competition. A limited number of three, two and one-year scholarships are available to outstanding students enrolled in the ROTC program at the university level. Full details are available at the Military Science department.

Flight Training Program. Flight training for qualified ROTC students is offered at no cost to the student during the senior year. Successful participation in the flight training program leads to an FAA private pilot license and prepares the student for the Army Flight School and a tour of duty in Army Aviation.

ROTC students desiring to obtain advanced degrees may, subject to the needs of the Army, be granted up to four years delay in reporting for active duty. For ROTC graduates, the period of active duty is normally two years, but may be less, contingent upon the needs of the service. Students accepting ROTC scholarships and/or flight training may be required to serve longer terms of active duty.

Military Science

Lower Division Courses

MS 1A. US Defense Establishment. (1)

CPT Rathje

The study of the development of the U. S. Defense Establishment from the American Revolutionary War through World War II, to include its origins and constitutional basis, its evolution and emergence as a professional military force. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 1B. US Defense Establishment. (1)

CPT Rathje

The study of the development, organization and functions of the Department of Defense. Includes studies of the roles, missions and organization of the various armed services and of collective defense agreements. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 1C. US Defense Establishment. (1)

CPT Rathje

The study of the varied missions of the U. S.

Army, to include military assistance and civic action programs, public works tasks, development of reserve forces and training for unconventional warfare. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 2A. American Military History. (2)

LTC Fuller

Study of selected battles and campaigns of the American Revolutionary War, War of 1812, and the War with Mexico. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 2B. American Military History. (2)

CPT Taylor

Study of selected battles and campaigns of the American Civil War, War with Spain and the First World War. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 2C. American Military History. (2)

LTC Fuller

The study of selected battles and campaigns of World War II, the Korean Conflict and the early years of the Vietnam conflict. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

Upper Division Courses

MS 103A. Principles of Leadership. (2)

MAJ Wilkins

The study of the principles of leadership, responsibilities and basic qualities of a leader, leadership traits and special problems of military leadership. The study of theories of management and organizational behavior and of the decision making process. Additionally, familiarization with communication systems and procedures used in the military team. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 103B. Advanced Tactical Theory. (2)

MAJ Wilkins

The advanced study of tactical theory within the framework of the military team. Familiarization

with small military unit organization and operations. Fundamentals of offensive and defensive combat and their application. Includes one field trip as course requirement. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 103C. Principles of Military Instruction. (2)

MAJ Wilkins

Introduction to military teaching techniques and principles of planning instruction. Familiarization with methods of instruction and practical application by the student, who is required to prepare several presentations, which include teaching a lesson, and use of closed-circuit television for self-evaluation. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 104A. Military Management. (2)

CPT Taylor

The study of the fundamentals of decision making, command and control problems, staff relationships, evaluation of situations and analysis of courses of action. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 104B. Fundamentals of Military Law and Military Intelligence. (2)

LTC Fuller

The study of military law and the fundamental concepts of military judicial procedures contained in the Uniform Code of Military Justice; rules of evidence, pre-trial, trial and appellant procedures. Familiarization with basic principles of military combat intelligence and counterintelligence procedures. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MS 104C. World Change and Military Implications. (2)

CPT Taylor

Analysis of the role of the United States in the contemporary world arena, with emphasis on the leadership and management problems of the US Army in support of this role. A portion of the quarter will be a treatment of the US Army's mission in stability operations for developing and transitional societies. Leadership laboratory required for all ROTC students.

Laboratory periods provide the student with opportunities for leadership development through practical exercises emphasizing the duties and responsibilities of junior leaders.

MUSIC

- Helen M. Barnett, M.A., *Professor of Music, Emeritus.*
 Lloyd Browning, M.A., *Professor of Music, Emeritus.*
 Roger E. Chapman, Ph.D., *Professor of Music, Emeritus.*
 Van A. Christy, Ph.D., *Professor of Music, Emeritus.*
 Karl Geiringer, Ph.D., *Professor of Music, Emeritus.*
^{1,2}Erno Daniel, P.S.D., *Professor of Music.*
 Maurice E. Faulkner, Ph.D., *Professor of Music.*
 Peter Racine Fricker, F.R.C.O., *Professor of Music (Chairman of the Department).*
 John E. Gillespie, Ph.D., *Professor of Music.*
⁴Theodor Göllner, Ph.D., *Professor of Music.*
 Stefan Krayk, License de Concerts, *Professor of Music.*
 Wendell A. Nelson, D.M.A., *Professor of Music.*
^{1,2}Dorothy L. Westra, M.S.M., *Professor of Music.*
 Clayton Wilson, M.M., *Professor of Music.*
 Carl Zytowski, M.A., *Professor of Music.*
 Dolores M. Hsu, Ph.D., *Associate Professor of Music.*
 Stanley D. Krebs, Ph.D., *Associate Professor of Music.*
 Peter A. Mark, M.S., *Associate Professor of Music.*
 Edward Applebaum, Ph.D., *Assistant Professor of Music.*
 Emma Lou Diemer, Ph.D., *Assistant Professor of Music.*
^{2,3}Roger D. Grove, M.M., *Assistant Professor of Music.*
 Michael Ingham, M.A., *Assistant Professor of Music.*
 Betty Oberacker, D.M.A., *Assistant Professor.*
 Michael Roeder, Ph.D., *Assistant Professor of Music.*
 Geoffrey B. Rutkowski, M.M., *Assistant Professor of Music.*
 Burnett F. Atkinson, B.Mus., *Lecturer in Music.*
 Suzanne J. Balderston, B.Mus., *Lecturer in Music.*
 Albert L. Campbell, M.A., *Lecturer in Music.*
 Dunn, Richard, M.A., *Lecturer in Music.*
 Ennis A. Fruhauf, D.M.A., *Lecturer in Music.*
 James Kanter, B.A., *Lecturer in Music.*
 Peter A. Mercurio, *Lecturer in Music.*
 Ronald Ondrejka, M.M., *Lecturer in Music.*
 Richard Anshutz, M.M., *Associate in Music.*
 Warren Spaeth, M.M., *Associate in Music.*

THE MAJOR

The Department of Music offers programs designed to serve as a background for professional or educational work in music, as preparation for graduate studies, or as an area of concentration for a liberal arts education.

The following five areas of emphasis are offered:

1. Theory-History
2. Theory-Composition
3. Performance
4. Special Performance

Requirements for the Major

Students majoring in music must meet the general education requirements as specified by the catalog. The Department recommends History 4A-B-C, and French, German, or Italian as a language.

¹ Absent on leave, Fall 1973.

² Absent on leave, Winter 1974.

³ Absent on leave, Spring 1974.

⁴ Absent on leave, 1973-74.

All new music majors, whether freshmen or transfers from other institutions or departments, are required to take placement tests in music theory and performance. Students must pass the sophomore audition, participate in and attend student recitals, and engage in at least one performance laboratory per quarter with or without credit. Students transferring from other institutions are required to complete at least three quarters within the Department.

Theory-History Emphasis

Preparation for the major: Music 2; 5A,B,C,D,E; 7 (sophomore paper); and 31–32 or 33 (6 units or less, determined by entrance audition); piano proficiency test.

The major: 40 upper division units: Music 101, or 102, or 103; 106A; 112A–B–C; 18 units in theory and/or history courses selected with the guidance of a faculty adviser; Music 198 (a senior research paper, meeting standards approved by the faculty of the Department, required of all theory-history majors).

Theory-Composition Emphasis

Preparation for the major: Music 2; 5A–B–C–D–E; 7 (sophomore paper); and 31–32 or 33 (6 units or less, determined by entrance audition); piano proficiency test.

The major: 40 upper division units: Music 101, or 102, or 103; 106A; 112A–B–C; 18 units in theory and/or composition courses selected with the guidance of a faculty adviser; 198 (a senior composition, meeting standards approved by the faculty of the Department, required of all theory-composition majors).

Performance Emphasis

Preparation for the major: Music 2; 5A–B–C–D–E; 7 (sophomore paper); and 31–32 or 33 (6 units or less, determined by entrance audition); piano proficiency test, except for piano majors.

The major: 40 upper division units: Music 101, or 102, or 103; 106A; 112A–B–C; 18 units in performance courses selected with the guidance of a faculty adviser; Music 198 (a senior performance audition, meeting standards approved by the faculty of the Department, required of all performance majors).

Special Performance Emphasis

This is a specialized performance major in any of the following areas: conducting, piano, carillon, organ, harpsichord, voice, flute, oboe, clarinet, bassoon, trumpet, French horn, trombone, violin, viola, violoncello, contrabass, percussion and harp. A high standard of performance must be shown in a special entrance audition.

Preparation for the major: Music 2; 5A–B–C–D–E; 7 (sophomore paper); and 31–32 or 33 (6 units or less, determined by entrance audition); piano proficiency test, except for piano majors.

The Major: 40 upper division units: Music 101, or 102, or 103; 112A–B–C; and 24 units in performance courses selected with the guidance of a faculty adviser, but to include Music 197 and 198 (a senior audition as well as a senior recital, meeting standards approved by the faculty of the Department, required of all special performance majors).

BACHELOR OF MUSIC DEGREE

The Bachelor of Music degree is open by audition to certain specially qualified students in Music. Information concerning admission to this program may be obtained by visiting or writing to the Department of Music. The General Education program for this degree is *identical* to that of the Bachelor of Arts degree, except that unlike the B.A. program, only 3 social sciences, 2 sciences, and 3 humanities are required for the Bachelor of Music. Further, the completion of the fifth quarter of one foreign language is required. Although a request for the deletion of this requirement is being considered, French, German or Italian is recommended. Details concerning the General Education requirements for this degree as well as the major requirements are available at the Department of Music.

THE DEGREE OF MASTER OF ARTS

Two different Master of Arts degrees are available in music. One, which involves a thesis or composition, is described in 1, below. The other, Master of Arts degree in musical performance, which involves a recital and supporting document, is described in 2. See page 78 for the general requirements for admission to graduate status.

1. The Master of Arts Degree in Musicology or Composition.

A. Following guidance examinations taken at entrance, the department may specify certain prerequisites to remedy any deficiencies in the student's undergraduate background. Normally such courses will not be included in the 36 units described below. Ordinarily more than three quarters will be needed to complete the following requirements.

B. Requirements:

(1) A minimum of 36 units distributed as follows:

- (a) (i) Musicology: thirteen graduate units in Music 200A–B, 269A and two courses chosen from 261 through 268.
- (ii) Composition: sixteen graduate units in Music 200A–B, 269A–B and two courses chosen from 261 through 268.

(b) Twenty-three units (for musicology), or twenty units (for composition) to be selected with the guidance of a faculty adviser. At least three of these units must be in graduate courses; the remainder may be in upper division courses. Further, these units must include three units in a liberal arts area outside of music and three units of upper division performance. However, if the student's work in performance is on the graduate level, the upper division requirements in performance will be waived, and the student will be allowed a maximum of six units of graduate level performance which will include the presentation of a graduate recital.

(2) A satisfactory reading knowledge of French, or German, or Italian must be demonstrated by examination. In certain cases the department may accept substitution of another foreign language for the one of those listed above.

(3) Depending upon the chosen field of emphasis, a thesis or a composition (more than one movement and at least 20 minutes in length), to be completed satisfactorily.

2. The Master of Arts Degree in Musical Performance or Conducting.

A. Students entering the program leading to the Master of Arts Degree in Musical Performance will normally be expected to possess an A.B. degree in Music from UCSB with a Special Performance Emphasis or a degree based on equivalent training. An entrance audition demonstrating graduate level ability in performance must meet with the approval of an appropriate faculty committee. Ordinarily more than four quarters will be needed to complete the following requirements.

B. Requirements:

(1) A minimum of 48 quarter units distributed as follows:

(a) 18 units of graduate level performance consisting of Music 220, Graduate Performance (6–12 units); Music 221, Graduate Chamber Music (0–6 units); Music 295, Graduate Recital (6 units). Students majoring in conducting shall take Music 230, Graduate Instrumental Conducting (8 units); and Music 231, Graduate Vocal Conducting (4 units); instead of Music 220 and Music 221.

(b) Fourteen units of graduate level history and literature including Music 200A (2 units), and two courses selected from Music 261 through 269A–B (6 units); the remaining six units are to be selected with the guidance of a faculty adviser.

(c) 16 units of electives which may include upper division courses and courses outside the department to be selected with the guidance and approval of the Graduate Adviser. From 2–6 upper division ensemble units will be required and will be accepted as part of the 16 units of electives.

(2) Proficiency in at least one foreign language must be demonstrated. The foreign language selected must have the approval of the department.

- (3) In addition to the course work, certain performances in public are required as follows: a graduate recital; a graduate chamber or solo performance; and, including the above, at least one significant performance each quarter. Students majoring in conducting are not required to offer a graduate chamber or solo performance. A record of the graduate recital (which will normally occur in the final quarter) in the form of a tape of the actual performance will be placed in the departmental archives. A written document is to be completed by the candidate giving the historical background and an analysis of the recital material.

THE DEGREE OF DOCTOR OF PHILOSOPHY (MUSICOLOGY OR COMPOSITION)

1. In addition to fulfilling the general requirements for admission to graduate status, the department requires completion of an M.A. degree in music from UCSB, or a degree based on equivalent training. Students having a degree from another institution must take a placement examination during the first quarter of residence. Students who do superior work may bypass the master's degree and proceed directly to the Ph.D.
2. The student must demonstrate by examination a reading knowledge of French and German and of such other languages as the field of specialization may require. One such examination should normally be passed before the M.A. degree is earned.
3. Students working toward the Ph.D. degree are required to take 30 units in specified courses in the history and theory of music, or composition including those seminars in the Music 261 through 269 series that have not previously been taken. The Ph.D. candidate is also required to take 12 units in an approved field outside of music. Those qualified in performance may earn 3 graduate units by means of a lecture-recital given before the qualifying examinations.
4. Before he is admitted to candidacy, the student must pass a series of written and oral qualifying examinations in music, history, theory, bibliography and literature covering the whole range of music history and theory.
5. A dissertation giving evidence of ability to conduct independent research of high quality, or a collection of compositions, including at least one of substantial size, is required of all candidates. The candidate in musicology will defend his dissertation in an oral examination. The candidate in composition will present an analysis of his works, and relate them to contemporary practice.

TEACHING CREDENTIALS

The Major with Credential

A major in music may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. In addition to the courses listed above for the departmental major, the teaching major requires 42–48 units in the following: Music 151A–B, 152, 153, 154, 20A–B (or 25), 108, 120A–B, MI 290, MV 290, and M 292A–B–C–D–E–F. Some of these units may be used as electives within the major.

The Minor with Credential

Thirty units are required, of which ten must be upper division units. These are to include Music 11, 15, 122, and nineteen units selected with the approval of an adviser, including an upper division course in the history and appreciation of music.

For further information concerning teaching credentials, students should confer with designated counselors in the Department of Music and the Graduate School of Education.

MUSIC

Lower Division Courses

1. Freshman Seminar in Music. (2) I.

Mr. Zytowski

Prerequisite: Permission of instructor.

The course will, by means of performance, discussion, and assigned reading, evaluate the professional standards needed for the composer, performer, scholar, or music teacher.

2. Introduction to Music History. (3) I, III.

Mr. Roeder, Mr. Rutkowski

For the major.

Prerequisite: Music 11 or equivalent.

A brief survey of Western Music, with concentration on stylistic characteristics of the different periods. Selected works of principal composers are discussed in detail.

5A-B-C-D-E. Music Theory.

(4-4-4-4-4) I, II, III.

The Staff (Mr. Krebs in charge)

For the major.

Prerequisite: Music 11 or passing grade on Theory placement exam.

A combined theory course, including written and keyboard harmony, sight singing and ear-training.

7. Form and Analysis. (3) III.

The Staff

For the major.

Prerequisite: Music 5E or permission of instructor.

Analysis of the structural elements of tonal music and the application of standard formal procedures to the creative process of music composition.

11. Fundamentals of Music. (4) I, II, III.

The Staff

The study of notes, scales, triads, inversions, rhythm, harmony, and musical terminology. Laboratory activities include keyboard orientation, sight-singing and ear-training.

15. Music History and Appreciation. (4)

I, II, III.

The Staff

For the nonmajor.

A selective survey of music of Western Civilization; evolution of forms, styles, media. Designed to enable the student to listen with understanding.

16. Masterworks of Music. (4) I, II, III.

Mr. Nelson, Mr. Rutkowski, Mr. Campbell

For the nonmajor.

Prerequisite: Music 15 or permission of the instructor.

A familiarization of non-music majors with great works of music, the latter being chosen to represent various media, textures and historical styles.

19. Harp. (1-3) I, II, III.

Mrs. Balderston

Prerequisite: Music 31A or permission of instructor.

May be repeated for credit up to 18 units.

20A-B-C-D-E-F. Elementary Voice.

(2-2-2-1-1-1) I, II, III.

Mr. Ingham, Miss Westra

Prerequisite: Music 11 or permission of instructor.

Primarily for the instrumental music major and the music minor.

24. Carillon. (1-3) I, II, III.

Mr. Fruhauf

Prerequisites: Music 33 or equivalent and permission of instructor.

May be repeated for credit up to 18 units.

25. Intermediate Voice. (1-3) I, II, III.

Mr. Zytowski, Miss Westra, Mr. Ingham

For the vocal major. May be repeated for credit up to 18 units.

26. Intermediate Strings. (1-3) I, II, III.

Lec. 1. Violin.

Mr. Krayk

Lec. 2. Viola.

Mr. Mark

Lec. 3. Cello.

Mr. Rutkowski

Lec. 4. Double Bass.

Mr. Mercurio

May be repeated for credit up to 18 units.

27. Intermediate Woodwinds. (1-3) I, II, III.

(Mr. Wilson in charge)

Lec. 1. Oboe.

Mr. Wilson

Lec. 2. Flute.

Mr. Atkinson

Lec. 3. Clarinet.

Mr. Kanter

Lec. 4. Bassoon.

The Staff

May be repeated for credit up to 18 units.

28. Intermediate Brass. (1-3) I, II, III.

Mr. Faulkner, Mr. Dunn

May be repeated for credit up to 18 units.

29. Intermediate Percussion. (1-3) I, II, III.

Mr. Faulkner

May be repeated for credit up to 18 units.

30. Organ. (1-3) I, II, III.

Mr. Campbell, Mr. Fruhauf

Prerequisites: Music 31A-B or equivalent and permission of instructor. May be repeated for credit up to 18 units.

31A-B-C. Basic Piano. (1-1-1) I, II, III.

The Staff (Mr. Grove in charge)

Placement by audition. Primarily for Music majors, and Music minors.

32A-B-C-D-E-F. Class Piano.

(1-1-1-1-1-1) I, II, III.

Mr. Grove, The Staff

Placement by audition. Primarily for Music majors, and Music minors.

33. Intermediate Piano. (1-3) I, II, III.

Mr. Nelson, Mr. Daniel, Mr. Grove

May be repeated for credit up to 18 units. For piano majors only.

Performance Laboratories

Courses 34 through 48 may be repeated for credit up to 6 units with the exception of Music 42. Enrollment by audition or permission of instructor.

34. The Chamber Singers. (1) I, II, III.

Miss Westra

35. Women's Glee Club. (1) I, II, III.

Mr. Ingham

35S. Women's Glee Club—The Dorians.(1) I, II, III. Mr. Ingham
Concurrent enrollment in Music 35 required.**36. Men's Chorus.** (1) I, II, III.

Mr. Zytowski

36S. Men's Chorus—Schubertians.(1) I, II, III. Mr. Zytowski
Concurrent enrollment in Music 36 required.**37. University Singers.** (1) I, II, III.

Miss Westra

38. Opera Workshop. (1) I, II, III.

Mr. Zytowski

39. Performance Workshop. (1) I, II, III.

The Staff

41. Piano Ensemble. (1) I, II, III.

Mr. Daniel, Mr. Nelson, Mr. Grove

42. Orchestra. (2) I, II, III. Mr. Ondrejka
May be repeated for credit up to 12 units.**43. Flute Choir.** (1) I, II, III. Mr. Atkinson
Prerequisite: Audition or permission of instructor.
The Flute Choir studies flute literature in depth, perfects technique and interpretation, employs the complete flute family of Bass, Alto flutes and piccolos; prepares ensemble for public performance each quarter.**44. Chamber Music Ensemble.** (1) I, II, III.Mrs. Balderston, Mr. Krayk,
Mr. Rutkowski, Mr. Mark

May be repeated for credit up to 9 units.

45. Brass Choir. (1) I, II, III. Mr. Faulkner**46. Woodwind Ensemble.** (1) I, II, III.

Mr. Wilson, Mr. Atkinson, Mr. Kanter

47. Symphonic Wind Ensemble. (1) I, II, III.

The Staff

47S. Studio Band. (1) I, II, III. The Staff**48. Musica Antiqua.** (1) I, II, III. The Staff
Performance workshop in Medieval and Renaissance music.**Upper Division Courses****101. Twentieth Century Techniques.** (4) I.

Miss Diemer

Prerequisite: Music 5E or equivalent.

102. Sixteenth Century Counterpoint. (4) II.

The Staff

Prerequisite: Music 5E or equivalent.

103. Canon and Fugue. (4) III. Mr. Krebs

Prerequisite: Music 5E or equivalent.

***104. Advanced Counterpoint.** (4) I. The Staff

Prerequisites: Music 101, 103 or equivalent.

*Not to be given, 1973-74.

106A-B. Orchestration. (4-4) I, II.

Mr. Faulkner

Prerequisite: Music 5E or equivalent. 106A or its equivalent is prerequisite to 106B.

***107. Advanced Orchestration.** (2-4) III.

Mr. Fricker

Prerequisite: Music 106A-B or equivalent.

108. Composition. (4) I, II, III. The Staff

Prerequisite: Music 5E or permission of instructor.

109. Advanced Composition. (2-6) I, II, III.

Prerequisite: Music 108 or equivalent. The Staff

110A-B-C. Score Reading and Analysis.

(2-2-2) I, II, III.

Mr. Ondrejka

Prerequisite: Music 121A-B-C. For conducting majors only.

***111. Jazz Arranging.** (2-4) III.

The Staff

Prerequisite: Permission of instructor.

112A-B-C. History and Analysis of Music.

(4-4-4) I, II, III.

Mr. Roeder, Mrs. Hsu

Prerequisites: Music 5E, 7. For the major.

112L. Music Library Research Techniques.

(2) III.

Mr. Silver

Prerequisites: Music 112A-B-C and permission of instructor.

An introduction to research in the music library for the music major in performance, theory history, and theory composition.

113. History and Literature of Russian Music.

(4) III.

Mr. Krebs

Prerequisite: Music 15 or equivalent. For the non-major. A survey of Russian music from its beginnings, but emphasizing the romantic and modern (Soviet) periods.

***114A. History of Jazz.** (4) III.

The Staff

Prerequisites: Music 15 or equivalent and permission of the instructor. Primarily for the non-major

114B. The Evolution of Rock. (4) II.

Mr. Spaeth

Prerequisites: Music 11, 15 and permission of instructor.

A comprehensive survey of the beginnings and evolution of rock from its precursors in country and western, blues, and gospel, through its development into rock and roll and eventually the various forms of rock.

115A. Symphonic Literature. (4) III.

Mr. Rutkowski

Prerequisite: Music 15 or equivalent. For the non-major.

115B. History and Literature of the**Concerto.** (4) II.

Mr. Nelson

Prerequisite: Music 15 or equivalent. For the non-major.

116A. History and Literature of Hispanic-*American Music.** (4) II.

Mr. Gillespie

Prerequisite: Music 15 or equivalent. For the non-major.

116B. Non-Western Music. (4) I.

Mr. Gillespie.

Prerequisite: Permission of instructor.

A study of the music of selected peoples of non-Western cultures, including considerations of musical form and structure, performance practice, and the history and social context of the music.

117. History and Literature of Opera. (4) II.

Mr. Zytowski

Prerequisite: Music 15 or equivalent. For the non-major.

***118A. History and Literature of Chamber Music. (4) III.**

The Staff

Prerequisite: Music 15 or equivalent. For the non-major.

***118B. The Music of Ludwig van Beethoven. (4) III.**

Mr. Gillespie

Prerequisite: Music 15 or equivalent.

A survey of the stylistic development of Beethoven's music, using representative works from each period of his life.

119A. History and Literature of Keyboard Music. (4) III.

Mr. Gillespie

Prerequisite: Music 15 or equivalent. For the non-major.

119B. History and Literature of Organ Music. (4) I.

Mr. Fruhauf

Prerequisite: Music 15 or equivalent. For the non-major.

120A-B-C. Conducting. (2-3) I, II, III.

Mr. Ondrejka

Prerequisite: Music 5E or permission of instructor.

121A-B-C. Projects in Conducting. (2-3) I, II, III.

Mr. Ondrejka

Prerequisites: Music 120A-B-C and permission of the instructor.

122. Fundamentals of Conducting. (3) I.

Mr. Ingham

Prerequisites: Music 11, 31A-B. For music minors.

123. Advanced Harp. (1-3) I, II, III.

Mrs. Balderston

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

124. Advanced Carillon. (1-3) I, II, III.

Mr. Fruhauf

Prerequisite: Passing of sophomore audition. May be repeated for credit up to 18 units.

125. Advanced Voice. (1-3) I, II, III.

Mr. Zytowski, Miss Westra, Mr. Ingham

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

126. Advanced Strings. (1-3) I, II, III.

Lec. 1. Violin.

Mr. Krayk

Lec. 2. Viola.

Mr. Mark

Lec. 3. Cello.

Mr. Rutkowski

Lec. 4. Double Bass.

Mr. Mercurio

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

127. Advanced Woodwinds. (1-3) I, II, III.

(Mr. Wilson in charge)

Lec. 1. Oboe.

Mr. Wilson

Lec. 2. Flute.

Mr. Atkinson

Lec. 3. Clarinet.

Mr. Kanter

Lec. 4. Bassoon.

The Staff

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

128. Advanced Brass. (1-3) I, II, III.

Mr. Faulkner, Mr. Linder

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

129. Advanced Percussion. (1-3) I, II, III.

Mr. Faulkner

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

130. Advanced Organ. (1-3) I, II, III.

Mr. Campbell, Mr. Fruhauf

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

131. Harpsichord. (1-3) I, II, III.

Mr. Gillespie

Prerequisite: Permission of instructor.

May be repeated for credit up to 18 units.

132A-B-C. Piano Accompanying. (2-2-2) I, II, III.

Mr. Grove

Prerequisite: Permission of instructor.

133. Advanced Piano. (1-3) I, II, III.

Mr. Nelson, Mr. Daniel, Mr. Grove

Prerequisite: Passing of sophomore audition.

May be repeated for credit up to 18 units.

151A-B. Strings. (2-2) I, II.

The Staff

Primarily for the credential.

Should be taken consecutively.

151A. Violin and Viola.

151B. Cello and Double Bass.

152. Brass. (3) I.

Mr. Faulkner

Primarily for the credential.

153. Woodwinds. (3) III.

Mr. Wilson

Primarily for the credential.

154. Percussion. (2) II.

Mr. Faulkner

Primarily for the credential.

162. Orchestra Music. (4) III.

Mr. Roeder

Prerequisite: Music 112A-B-C or permission of instructor.

163A. Keyboard Music. (4) III.

Mr. Gillespie

Prerequisite: Music 112A-B-C or permission of instructor.

163B. Organ Music. (4) I.

Mr. Fruhauf

Prerequisite: Music 112A-B-C or permission of instructor.

164. Chamber Music. (4) III.

Mr. Mark

Prerequisite: Music 112A-B-C or permission of instructor.

* Not offered 1973-74.

- *165. **Art Song.** (4) II. Miss Westra
Prerequisite: Music 112A-B-C or permission of instructor.
166. **The Concerto.** (4) II. Mr. Nelson
Prerequisite: Music 112A-B-C, or permission of instructor for the major.
- *167A. **National Elements in Hungarian Music.** (4) III. Mr. Daniel
Prerequisite: Music 112A-B-C or permission of the instructor.
- 167B. **National Elements in Scandinavian Music.** (4) I. Mr. Applebaum
In depth discussion and analysis of Scandinavian music concentrating on the 19th and 20th centuries.
- *173A-B. **History and Literature of Church Music.** (4-4) II, III. Mr. Gillespie
Prerequisite: Music 112A or permission of instructor.
174. **Non-Western Music.** (4) I. Mr. Gillespie.
Prerequisite: Permission of instructor.
A study of the music of selected peoples of non-Western cultures, including considerations of musical form and structure, performance practice, and the history and social context of the music. For the major.
- *175. **Contemporary Jazz.** (4) II. The Staff
Prerequisite: Permission of the instructor. Primarily for the major.
177. **Opera and Music Drama.** (4) II. Mr. Mark
Prerequisite: Music 112C or permission of instructor.
A study of the history and literature of opera and music drama from its origins to the present day.
- *178. **History of Musical Instruments.** (4) II. The Staff
Prerequisite: Music 112A or permission of instructor.
A study of the development and use of musical instruments from classical antiquity to the present day.
179. **Studies in Medieval Music.** (4) III. The Staff
Prerequisite: Music 112A or permission of instructor.
Primarily for the major emphasizing history and theory.
Introduction to the liturgy and music of the Middle Ages based on manuscripts from the Santa Barbara Mission.
180. **Studies in Renaissance Music.** (4) II. The Staff
Prerequisite: Music 112A-B or permission of instructor.
Primarily for the major emphasizing history and theory.
Cantus firmus settings of the fifteenth century. Chanson and motet. The parody mass of the sixteenth century.
181. **Studies in Baroque Music.** (4) II. Mr. Gillespie
Prerequisite: Music 112A-B or permission of instructor.
- *182. **Studies in Classic Music.** (4) I. Mrs. Hsu
Prerequisite: Music 112A-B-C, or permission of instructor.
183. **Studies in Romantic Music.** (4) III. Mr. Gillespie
Prerequisite: Music 112A-B-C, or permission of instructor.
184. **Studies in Contemporary Music.** (4) II. Mr. Fricker
Prerequisite: Music 112A-B-C, or permission of instructor.
185. **Music Criticism.** (4) III. The Staff
Prerequisite: Music 112A-B-C, or permission of instructor.
186. **Introduction to Musical Acoustics.** (3) II. Mr. Jacobs
Topics will include the physics of sound, the anatomy of the human ear, and the acoustical properties of musical instruments.
- *187. **Strauss and Hofmannsthal.** (4) I. Mrs. Hsu and Mr. Exner
For majors, either in the Department of Music or Department of Germanic & Slavic Languages.
An interdisciplinary course on the collaboration between composer and poet. A study of the correspondence and the operas with special emphasis on *Elektra*, *Der Rosenkavalier* and *Ariadne*. This is a related course to German 187.
- *188. **The French Art Song from Symbolism to Surrealism.** (4) II. Mrs. Hsu and Mrs. Cushing
Prerequisite: Permission of instructors.
Open to Music and French majors.
An interdisciplinary study in text-music relationships from Faure to Poulenc; from Baudelaire to Eluard. May be taken for credit only once as either Music 188 or French 188.
197. **Senior Recital.** (2) I, II, III. The Staff
Prerequisite: Permission of instructor.
198. **Senior Auditions.** (2) I, II, III. The Staff
Required for graduation.
Senior Audition or paper.
199. **Independent Studies in Music.** (1-5) I, II, III. The Staff
Open to qualified seniors.
199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Performance Laboratories

Courses 134 to 148 may be repeated for credit up to 9 units with the exception of Music 142. Admission by audition or permission of instructor.

134. The Chamber Singers. (1) I, II, III.

Miss Westra

* Not to be given, 1973-74.

135. Women's Glee Club. (1) I, II, III.

Mr. Ingham

135S. Women's Glee Club—The Dorians.

(1) I, II, III. Mr. Ingham

Concurrent enrollment in Music 135 required.

136. Men's Chorus. (1) I, II, III.

Mr. Zytowski

136S. Men's Chorus—Schubertians.

(1) I, II, III. Mr. Zytowski

Concurrent enrollment in Music 136 required.

137. University Singers. (1) I, II, III.

Miss Westra

138. Opera Workshop. (1) I, II, III.

Mr. Zytowski

139. Performance Workshop. (1) I, II, III.

The Staff

141. Piano Ensemble. (1) I, II, III.

Mr. Daniel, Mr. Nelson, Mr. Grove

142. Orchestra. (2) I, II, III. Mr. Ondrejka

May be repeated up to 18 units.

143. Flute Choir. (1) I, II, III. Mr. Atkinson

Prerequisite: Audition or permission of instructor.

The Flute Choir studies flute literature in depth, perfects technique and interpretation, employs the complete flute family of Bass, Alto flutes and piccolos; prepares ensemble for public performances each quarter.

144. Chamber Music Ensemble. (1) I, II, III.

Mrs. Balderston, Mr. Krayk,

Mr. Mark, Mr. Rutkowski

145. Brass Choir. (1) I, II, III. Mr. Dunn

146. Woodwind Ensemble. (1) I, II, III.

Mr. Wilson, Mr. Atkinson, Mr. Kanter

147. Symphonic Wind Ensemble. (1)

I, II, III The Staff

147S. Studio Band. (1) I, II, III. The Staff

148. Musica Antiqua. (1) I, II, III. The Staff

Performing workshop in Medieval and Renaissance music.

Graduate Courses

200A-B. Bibliography and Research

Techniques. (2-2) I, II. Mrs. Hsu

201A-B-C. Notation and Music: Their

Historical Interrelation.

(3-3-3) I, II, III Mr. Göllner

*A. Plainchant-Neumes-Polyphony-Modal Notation.

*B. Origin and Development of the Mensural System.

*C. Instrumental Tablatures for Keyboard and Lute.

207. Seminar in Orchestration. (3) II.

Mr. Applebaum

208A-B-C. Graduate Composition.

(3-3-3) I, II, III. The Staff

220. Graduate Performance. (2) I, II, III.

The Staff

Prerequisite: Audition required for entrance. May be repeated for credit up to 6 units.

221. Graduate Chamber Music.

(2-6) I, II, III. The Staff

Prerequisite: Permission of instructor.

Performance in chamber ensembles.

230. Graduate Instrumental Conducting

(2) I, II, III. Mr. Ondrejka

Prerequisite: Audition required for entrance. May be repeated for credit up to 8 units.

231. Graduate Vocal Conducting. (2)

I, II, III. Mr. Ondrejka

Prerequisite: Audition required for entrance. May be repeated for credit up to 4 units.

*250. Master's Seminar in Music Theory.

(4) I. Mr. Applebaum

*261. Seminar in Music of the Early Middle

Ages. (3) I. Mr. Göllner

The beginnings of polyphony in treatises and practical sources. The school of Notre Dame. The motet of the thirteenth century.

262. Seminar in Music of the Late Middle

Ages. (3) I. The Staff

Fourteenth century secular music in Italy and France. The motet from Ph. de Vitry to G. de Machaut, Polyphonic settings of the Mass ordinary.

263. Seminar in Music of the Renaissance.

(3) III. The Staff

G. Dufay and the beginnings of the Netherlands School. Vocal and instrumental aspects of sixteenth century music. The rise of instrumental music in the fifteenth and sixteenth century.

264. Seminar in Music in the Early Baroque

Period. (3) I. Mr. Gillespie

265. Seminar in Music of the Late Baroque

Period. (3) II. Mr. Gillespie

*266. Seminar in Music of the Classical

Period. (3) III. The Staff

267. Seminar in Music of the Early

Romantic Period. (3) II. Mrs. Hsu

268. Seminar in Music of the Late

Romantic Period. (3) III. Mrs. Hsu

269A. Seminar in Twentieth Century Music

before 1945. (3) II. Mr. Fricker

269B. Seminar in Music since 1945. (3) III.

Mr. Applebaum

* Not to be given, 1973-74.

270A-B. Master's Seminar in Music Education. (3-3) II, III. Mr. Faulkner

***273. Seminar in Church Music.** (4) I.
Mr. Gillespie

275. Seminar in Music Criticism. (3) II.
Mrs. Hsu

***276. Seminar in Style and Form in Twentieth Century Music.** (4) III.
Mr. Fricker
A detailed study of specially chosen major works of present day music.

***278. Seminar in History of Musical Instruments.** (3) III. The Staff

***281. Interdisciplinary Studies.** (3) III.
The Staff

***283. Seminar in Philosophy and History of Music Education.** (4) II. Mr. Faulkner

289. Transcription, Editing and Performance of Early Music. (2) I, II, III. The Staff
May be repeated for credit.

295. Graduate Recital. (2-6) I, II, III.
The Staff
Preparation of public recital required for degree.

594AA-594ZZ. Special Topics. (1-4) I, II, III.
The Staff
Special seminar in selected problems of current musicology, composition, or performance.

595AA-595ZZ. Group Studies. (3) I, II, III.
The Staff
Critical review of research in selected problems of musicology, composition, or performance.

596AA-596ZZ. Directed Reading and Research. (2) I, II, III. The Staff
Individual tutorial for research in musicology, composition, or performance; Instructor will usually be student's major professor.

597AA-597ZZ. Individual Study for Ph.D. Examinations. (1-4) I, II, III. The Staff
Instructor will be student's major professor or chairman of his doctoral committee.

598AA-598ZZ. Preparation for the Master's Degree. (1-4) I, II, III. The Staff
Instructor will be chairman of student's thesis committee, directing research in musicology, composition, or performance. Maximum of 12 units total.

599AA-599ZZ. Ph.D. Dissertation Preparation. (1-4) I, II, III. The Staff
Instructor will be chairman of student's doctoral committee. Maximum of 12 units total.

590 series courses may be taken for a maximum of 24 units.

MUSIC EDUCATION COURSES

Education ME 190A-B. Piano Pedagogy.
(2-2) I, II. Mr. Grove
Prerequisite: Open to all music majors and minors with permission of instructor.
A study of basic principles of teaching; includes a survey and evaluation of methods and materials.

Education MI 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Instrumental Music. (3) I. Mr. Faulkner
Prerequisite: Music 151A-B, 152, 153, 154 or permission of instructor.
Includes methods in both elementary and secondary schools.

Education MV 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Vocal Music.
(3) I. Mr. Faulkner
Prerequisite: Music 20A-20B, or equivalent.
Vocal materials, curriculum, and methods of teaching in both the elementary and secondary schools.

Education M 392A-B-C-D-E-F. Student Teaching: Music. (3-3-3-3-3) I, II, III. Mr. Faulkner
Prerequisites: Ed. MI 290, MV 290. To give music major and minor experience for general secondary credential in teaching music (classes, conducting and lessons).

Education M 393A. Problem Seminar in the Teaching of Music. (1) I, II, III. Mr. Faulkner
Prerequisite: Concurrent enrollment in Ed. M. 292A-B-C-D-E-F. Studies of the problems arising in student teaching. For the major.

Education M 393B. Problem Seminar in the Teaching of Music. (1) I, II, III. Mr. Faulkner
Prerequisite: Concurrent enrollment in Ed. M. 292A-B-C-D-E-F. Studies of the problems arising in student teaching. For the minor.

***Education ME 393. Elementary Music Curriculum and Procedures.** (3) I, II, III. Miss Westra
Prerequisite: Music 20A-20B, or equivalent.

NATURAL SCIENCE

Curtis B. Anderson, Ph.D., *Associate Professor of Chemistry.*
Glen E. Schrank, Ph.D., *Associate Professor of Physics.*
Philip C. Laris, Ph.D., *Associate Professor of Biology.*

* Not to be given, 1973-74.

A unified survey of important concepts in the natural sciences and their technological and social implications, sponsored jointly by the Department of Physics (1A), Chemistry (1B) and Biological Sciences (1C). Course 1A is prerequisite to 1B; course 1B is prerequisite to course 1C.

Not open to students who have completed a college level course in the Biological or Physical Sciences. Exceptions can be made with consent of the instructor and approval of the Dean.

General Education credit for this course sequence will be granted only if the entire series is passed. Upon completion of the three, General Education requirements 5a, 5b, and 5c will be satisfied.

1A-B-C. Contemporary Natural Science.

(4-4-4) I(A), II(B), III(C)

Mr. Schrank, Mr. Anderson, Mr. Laris

1A—Lecture, four hours

Natural Science 1A, Physics, presents a modern description of matter from the scale of the universe to the scale of sub-atomic particles. The focus is on the concepts and ideas which man has devised to describe the order, simplicity and beauty of nature at its most fundamental level and which form the basis of current scientific and technological disciplines. The course is basically descriptive involving little use of mathematics but some familiarity with high school algebra is useful. Not open for degree credit to students who have completed Physics 10.

1B—Lecture, three hours; laboratory, two hours

Natural Science 1B, Chemistry, is an introductory survey of basic chemical principles in the context of selected technological and environmental prob-

lems. Topics have included: atomic theory, states of matter, the mole in weight relations and solutions, electronic structure of the atom, bonding in molecules, periodicity, the atmosphere and atmospheric pollution, rates of reaction and equilibrium, ionic equilibrium and pH, thermodynamics, energy production, and classes of organic compounds. Laboratory experiments demonstrate how analytical measurements can be made and various chemical phenomena.

Not open for degree credit to students who have completed Chemistry 25.

1C—Lecture, four hours

Natural Science 1C, Biology—selected aspects of modern biology. Topics generally include cell structure, cellular chemistry, nutrition, population growth, birth control, basic genetics, evolution, and ecology.

Not open for degree credit to students who have completed Biology 20 or Botany 20.

NUCLEAR ENGINEERING

See Chemical and Nuclear Engineering.

PHILOSOPHY

⁵Herbert Fingarette, Ph.D., *Professor of Philosophy.*

³Noel Fleming, D.Phil. (Oxon), *Professor of Philosophy (Chairman of the Department).*

Harry K. Girvetz, Ph.D., *Professor of Philosophy (Undergraduate Adviser).*

Alexander Sesonske, Ph.D., *Professor of Philosophy.*

Paul D. Wienpahl, Ph.D., *Professor of Philosophy.*

Burleigh T. Wilkins, Ph.D., *Professor of Philosophy.*

Hubert R. G. Schwyzer, Ph.D., *Associate Professor of Philosophy.*

³Charlotte Stough, Ph.D., *Associate Professor of Philosophy (Graduate Adviser).*

Francis W. Dauer, Ph.D., *Assistant Professor of Philosophy.*

²J. William Forgie, Ph.D., *Assistant Professor of Philosophy (Graduate Adviser).*

Richard J. Ketchum, Ph.D., *Assistant Professor of Philosophy.*

Lloyd R. Reinhardt, B.A., *Assistant Professor of Philosophy.*

Jerrold Tannenbaum, B.A., *Acting Assistant Professor of Philosophy.*

Offerings in philosophy are not only intended to provide undergraduate preparation for graduate study in philosophy; they are designed to contribute to general education and to preprofessional training in areas (e.g., law) where early specialization is normally discouraged. In numerous instances courses are directly related to specific disciplines or groups of dis-

² Absent on leave, Winter 1974.

³ Absent on leave, Spring 1974.

⁵ Absent on leave, Winter and Spring 1974.

ciplines for which they are intended to supply a philosophical framework (e.g., "Aesthetics" for the arts, "Philosophy of Science" for the natural sciences, etc.). The staff should be consulted for the courses best adapted to these several purposes.

PHILOSOPHY MAJORS

The major in philosophy is of two kinds: (I) that designed to prepare the student for graduate study in philosophy, and (II) that for the student who is intending to go on to graduate work in another field, for example, law, or the student whose interests are limited to a liberal education leading to the Bachelor of Arts degree.

Major I

Preparation for the major: Philosophy 20A–B–C (must be taken in sequence); Philosophy 183 and 184 (may be applied toward upper division unit requirement). History 4A–B–C.

The major: 48 upper division units in Philosophy including the following specified courses.

Group A: Two quarters of Philosophy 135 (170 may be substituted for one quarter), and 111 or 181 (only one quarter required).

Group B: At least three courses from the following: Philosophy 160, 161, 162, 163, 164, 165.

Group C: Either Philosophy 166AB or two courses from the following: Philosophy 151, 152, 153, 156 (one of these must be 152 or 153).

The remaining courses to be chosen according to the student's interests.

NOTE: It should not be assumed that every course listed in the above three Groups will be offered each year.

Major II

Preparation for the major: Philosophy 20A–B–C (must be taken in sequence); Philosophy 3 or 183; History 4A–B–C.

The major: 36 units in upper division Philosophy which must include at least one course from Groups A and B, and two courses from Group C as specified above. (Philosophy 183, if taken in preparation for the major, may be counted in these 36 units.)

COMBINATION MAJOR

Students interested in a combination major with emphasis on social science see page 359.

GRADUATE DEGREES IN PHILOSOPHY (PH.D., M.A., C.PHIL.)

The graduate program in Philosophy is a Ph.D. program. Only in special circumstances will the Department accept students whose aim is limited to earning the M.A. degree. However, provision is made within the Ph.D. program for awarding the M.A. degree when the student has demonstrated the requisite level of competence.

1. See *Graduate Division Announcement* for admission to graduate status.

2. In special circumstances a student who is substantially short of an undergraduate major in Philosophy may be provisionally admitted to the program to make up deficiencies. There is no guarantee that upon completion of the required courses such a student will be promoted to regular standing in the program.

THE DEGREE OF DOCTOR OF PHILOSOPHY

1. *Preliminary Requirements:* All incoming graduate students are required, except under special circumstances, to complete successfully the Introductory Graduate Seminar (Philosophy 200) as a prerequisite to continuation in graduate status. Though this seminar is offered only in the Fall Quarter of each year, provision may be made for admission to the program in other quarters.

2. There is no foreign language requirement.

3. *Logic Requirements:* The student must show proficiency in logic either by passing Philosophy 183 and 184, or by having passed their equivalent elsewhere, or by examination.

4. *Course Requirements:* Upon satisfactory completion of the Introductory Graduate Seminar the student will be required to complete a MINIMUM of 12 courses, not including Philosophy 183, 184 and the Introductory Graduate Seminar. (For students who have done graduate work elsewhere adjustments may be made.) At least 8 of the 12 courses must be 4 unit graduate seminars.

5. *Advancement to Candidacy:* There are two stages of being advanced to candidacy.

A. The student shall write during the period of one quarter a substantial paper on a topic to be determined jointly by the student and a three-member committee of the faculty. In evaluating this paper the committee will seek evidence of depth and ability requisite to the writing of a doctoral dissertation. This Qualifying Paper must be accepted before advancement to the Oral Examination.

B. The student will be required to pass an Oral Examination. Upon successful completion of this examination he will be awarded the M.A. degree and advanced to candidacy for the Ph.D. degree (C.Phil.).

6. Satisfactory completion of a dissertation and an oral defense thereof conclude the requirements for the Ph.D. degree.

Requirements for Graduate Study not Leading to a Degree

Students are permitted to do advanced studies in philosophy without working for a higher degree. Such students need not have majored in philosophy, although they must have taken a number of courses in philosophy. Only such of the regulations as apply to admission and standards concern these students.

TEACHING CREDENTIALS

Either a major or a minor in Philosophy may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Philosophy and in the Graduate School of Education.

PHILOSOPHY

A list of specific courses to be offered, with descriptions, will be available at the Department of Philosophy office at the time pre-enrollment counseling begins for each quarter.

Lower Division Courses

1. Short Introduction to Philosophy.

(4) I, II, III.

The Staff

Philosophical ideas in terms of which western civilization seeks to understand itself and the world of which it is a part.

Not open for credit to students who have completed Philosophy 5.

(Note: will satisfy the General Education requirement. An introductory philosophy course [1 or 5 or 20ABC] is prerequisite to ANY upper division course.)

3. Logic in Practice. (4)

The Staff

Practical reasoning, argumentation, and the anal-

ysis of language as instruments of sound thinking in everyday life.

Open to all students.

(Note: Will NOT satisfy the General Education requirement.)

5. Ideas and Practice of Philosophy.

(4) I, II, III.

The Staff

An introduction to ways of thinking philosophically and to philosophical ideas. For the nonmajor who desires to emphasize reading in original texts and frequent oral and written discussion. Enrollment limited to 20.

Not open for credit to students who have completed Philosophy 1. Enrollment limited to lower division students only.

(Note: Will satisfy the General Education requirement. An introductory philosophy course [1 or 5 or 20ABC] is prerequisite to ANY upper division course.)

20A-B-C. History of Philosophy. (4-4-4)

A-I; B-II; C-III.

The Staff

Must be taken in sequence; exceptions allowed only with consent of the instructor.

20A—From Thales to Aristotle.

20B—Medievalists to Rationalists.

20C—Empiricists and Kant.

(Note: The year sequence will satisfy the General Education requirement. An introductory philosophy course [1 or 5 or 20ABC] is prerequisite to ANY upper division course.)

Upper Division Courses

Philosophy 1, 5, or 20A–B–C, or consent of the instructor is required for all upper division courses.

101. The Practice of Analytic Philosophy. (4)

Prerequisite: 1 course in philosophy.

A course devoted to the writing of philosophy, both critical and constructive, within the analytic tradition and on current problems. The nature of analytic philosophizing will be discussed.

104. Ethics. (4)

The Staff

A history of ethical theory.

105. Contemporary Ethical Theory. (4)

The Staff

108. Philosophy of the Social Sciences. (4)

Mr. Wilkins, Mr. Girvetz

Prerequisites: Philosophy 183 and two upper division social science courses recommended.

Logical and methodological problems of the social sciences. Analysis of various claims that the social sciences have a necessarily unique methodological status amongst the sciences.

109. Philosophy of Liberalism. (4) Mr. Girvetz

An examination of the assumptions and implications of classical and contemporary liberalism.

111. Metaphysics. (4)

Mr. Wienpahl, Mr. Schwyzer

112. Philosophy of Religion (4) Mr. Forgie

Consideration of a number of the following topics: divine prediction, the nature of God, religious experience, the "proofs" of the existence of God, the problem of evil, psychological explanations of religious belief and religious language.

118. Philosophy in the Nineteenth Century. (4)

Mr. Wilkins, Mr. Girvetz

German idealism, romanticism and the philosophical implications of 19th century scientific developments.

119. American Philosophy. (4)

American philosophy since 1800; idealism, naive realism, critical realism, pragmatism.

121. Political Philosophy. (4) Mr. Girvetz,

Mr. Wilkins

Prerequisite: Philosophy 1, or 20A–B–C, or upper division standing in Political Science, or permission of the instructor.

Analysis of fundamental political conceptions; the state, sovereignty, political obligation, natural rights, natural law, etc.

122. Philosophies of India (4) The Staff

Prerequisite: Philosophy 20A or permission of instructor.

123. Classical Chinese Philosophy. (4)

Mr. Fingarette, Mr. Wienpahl

Prerequisite: Six units of philosophy or East Asian Studies, or consent of the instructor.

A study of selected classic texts of the period of the "philosophers" (approximately 500 to 200 B.C.). Primary emphasis on the *Analects* and the *Tao Te Ching*. (See detailed description of course available at Philosophy Department office.)

124. Philosophy of Science. (4) Mr. Wilkins

Prerequisites: Philosophy 183 and two upper division science courses recommended.

Analysis of the interrelated functions of scientific theories, models, laws, experiments, and observational procedures in relation to the goals of explanation, prediction, control, and understanding. Problems of induction and the logic of confirmation.

127A–B. Philosophy of History. (4–4)

Mr. Wilkins

132A–B. Existentialism. (4–4)

Prerequisite: 132A is prerequisite to 132B.

133. Philosophy of Language. (4)

Mr. Reinhardt, Mr. Schwyzer

A study of certain recent philosophical accounts of the nature of language, of what it is to speak and to understand, and of the relation of language to its subject matter.

135. Contemporary Philosophy. (4)

The Staff

Prerequisite: Philosophy 20C or consent of the instructor.

Positivism, pragmatism, existentialism, analytic philosophy, and other tendencies in contemporary thought.

May be repeated up to 12 units.

136. Aesthetics. (4)

Mr. Fleming, Mr. Sesonske

Analysis of the aesthetic experience, the aesthetic object, the creative act and art criticism.

137. Aesthetic Theory. (4)

Mr. Schwyzer, Mr. Sesonske

A study of some major works in the philosophy of art from Plato to the present, with emphasis on the development and analysis of the basic concepts employed in criticism of the arts.

146. Philosophy in Literature. (4)

Mr. Fingarette, Mr. Fleming

Study of philosophical ideas expressed in the literature of the Western world.

151. Pre-Socratics. (4)

Miss Stough

Prerequisite: Philosophy 20A–B.

152. Plato. (4) Mr. Ketchum, Miss Stough

Prerequisite: Philosophy 20A, or consent of the instructor.

- 153. Aristotle. (4)** Miss Stough
Prerequisite: Philosophy 20A–20B, or consent of the instructor.
- 156. Hellenistic Philosophy. (4)** Miss Stough
Prerequisite: Philosophy 20A–B.
An examination of the thought of major Greek philosophers of the Hellenistic period.
- 157. Medieval Philosophy. (4)** The Staff
Prerequisites: Philosophy 152 and 153, or consent of the instructor.
- 160. Descartes. (4)** Mr. Wienpahl
Prerequisite: Philosophy 20B–C, or consent of instructor.
- 161. Spinoza. (4)** Mr. Wienpahl
Prerequisite: Philosophy 20B–C, or consent of instructor.
- 162. Leibniz. (4)** Mr. Reinhardt
Prerequisite: Philosophy 20B–C, or consent of instructor.
- 163. Locke. (4)** Mr. Fleming
Prerequisite: Philosophy 20B–C, or consent of instructor.
- 164. Berkeley. (4)** Mr. Fleming
Prerequisite: Philosophy 20B–C, or consent of instructor.
- 165. Hume. (4)** Mr. Fleming, Mr. Dauer
Prerequisite: Philosophy 20B–C, or consent of instructor.
- 166A–B. Kant. (4–4)** Mr. Schwyzer
Prerequisite: Two courses from the sequence from 160 through 165, or consent of the instructor.
Must be taken in sequence. Cannot be used to satisfy a philosophy requirement unless both quarters are taken.
An examination of the philosophy of Kant with special attention to the *Critique of Pure Reason*.
- 167A–B. Hegel. (4)**
- 168. Nietzsche. (4)** Mr. Fleming, Mr. Wienpahl
Prerequisite: Philosophy 20B–C, or consent of the instructor.
- 169. Phenomenology. (4)**
An examination of the philosophies of Husserl and his disciples.
- 170. Wittgenstein. (4)** Mr. Schwyzer, Mr. Forgie
Prerequisite: Philosophy 20A–B–C or consent of the instructor.
- 171. Marx. (4)** Mr. Tannenbaum
Prerequisite: Philosophy 5 or Philosophy 20ABC or consent of the instructor.
A study of the development and content of Marx's views on man, society and history. Special attention will be paid to his writings prior to the *Communist Manifesto*, but material from later works will be considered as well.
- 175. Other Philosophers. (4)** The Staff
Prerequisites: At least one course in Philosophy and permission of the instructor.
Course content will vary. Philosophers not taught in a regular course offering—such philosophers as Plotinus, Bacon, Hobbes, Pascal, Reid, Schopenhauer, Bradley—yet whose work is intrinsically important will be studied. Students may check with the Department Office for more detailed information before enrolling.
May be repeated up to 12 units.
- 180A–B. Philosophical Psychology. (4–4)** Mr. Fingarette, Mr. Fleming, Mr. Reinhardt
Prerequisite: Consent of the instructor.
An examination of some of the concepts of the mind, such as those of desire, intention, action, perception, sensation, and the unconscious.
- 181A–B. Theory of Knowledge. (4–4)** Mr. Reinhardt
- 182. Concepts of Psychoanalysis. (4)** Mr. Fingarette
Prerequisite: Consent of the instructor.
Lectures, reading, and case study critiques from Freud and contemporary psychoanalysis; an introduction to the principal conceptions for the student of philosophy and of the arts and humanities in general.
- 183. Beginning Modern Logic. (4)** Mr. Dauer, Mr. Ketchum
Open to lower division students with the consent of the instructor.
An introduction to the concepts and methods of modern symbolic logic. Emphasis is placed on problems of translating English expressions into logical symbols and on the development of skills in using the formal proof procedures of sentential and predicate logic.
- 184. Intermediate Modern Logic. (4)** Mr. Dauer, Mr. Ketchum
Prerequisite: Philosophy 183 or equivalent, or consent of the instructor.
Further application and development of the predicate calculus, including the calculi of identity and description. An introduction to the metalogical questions of completeness, consistency, and decidability.
- 185. Advanced Modern Logic. (4)** Mr. Dauer
Prerequisite: Philosophy 184 or equivalent, or consent of the instructor.
Topics from the theory of formal systems, set theory, recursive function theory, and automata theory.
- 187. Philosophy of Mathematics. (4)**
Prerequisite: Philosophy 183 or equivalent, or consent of instructor.
Logistic, formalist, and intuitionist views of the nature of mathematics. Epistemological problems of applied mathematics.
- 188. Theory of Value. (4)** Mr. Wilkins
- 192. Philosophy of Law. (4)** Mr. Tannenbaum
Prerequisite: Philosophy 104 or consent of the instructor.
An introduction to some of the main issues gen-

erated by the philosophical question "What is law?" 1. In what sense is conduct made obligatory by the existence of law? 2. What, if any, is the relationship between law and morals? 3. What are rules? What does it mean to say that a rule exists? Do courts really apply rules or merely pretend to do so?

193. Punishment and Responsibility. (4)

The Staff

Prerequisite: Philosophy 1 or 5 or 20A-B-C or consent of the instructor.

An examination of some of the philosophical problems relevant to the practice of punishment and determinations of responsibility: the rationale of the practice of punishment and the legal doctrine of *mens rea*; the analysis of specific conditions of responsibility ('acts of will', intention, and negligence); the claim that the criminal law could and should dispense with mental conditions of responsibility; the distinctions and relations between the meanings of 'punishment', 'responsibility', 'retribution', 'guilt', 'shame', etc.

194. Group Studies in Philosophy. (4)

The Staff

Course may be repeated for credit up to 8 units. Enrollment normally limited to 12 or fewer students.

195. Advanced Seminar in Classical

Philosophy. (4)

Miss Stough, Mr. Ketchum

Prerequisite: At least two upper division courses in philosophy. Admission by interview with instructor only.

Intensive reading and discussion of the texts of individual Greek philosophers. Specifics will be available in Departmental Course List.

196. Senior Honors Seminar. (4) I. The Staff

Enrollment limited to senior Philosophy majors; by consent of instructor.

A discussion course centered around a single topic or problem to be announced in advance by the instructor.

197A-B. Senior Honors Thesis. (2-2) II, III.

The Staff

Enrollment limited to senior Philosophy majors; by consent of instructor.

A research and writing tutorial designed for senior honors majors. The first term will be spent mainly in selecting and researching a topic for the thesis. The second term will be spent mainly in the writing of the thesis.

198. Readings in Philosophy. (1-4) I, II, III.

Admission by special arrangement. The Staff

Individual readings of the works of specific philosophers. This course may be taken for no more than three quarters and for a maximum of 4 units each quarter.

199. Independent Studies in Philosophy.

(1-5) I, II, III.

The Staff

Admission by special arrangement. 199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses

200. Introductory Graduate Seminar. (6) I.

Prerequisite: Graduate standing.

The Staff

Required of, and open only to, beginning graduate students as an introduction to graduate study in this Department. The content varies from year to year but shall always be a major topic or figure. Extensive writing will be required.

251. Seminar in Metaphysics. (1-4) The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

252. Seminar in Aesthetics. (1-4) The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

253. Seminar in the Philosophy of Language.

(1-4)

The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

254. Seminar in Ethics. (1-4)

The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

255. Seminar in the Philosophy of the Social

Sciences. (1-4)

The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

256. Seminar in Epistemology.

(1-4)

The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

257. Seminar in the Philosophy of History.

(1-4)

The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

260. Problems in Legal and Political

Philosophy. (1-4)

The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

262. Seminar in the Philosophy of Mind.

The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

264. Seminar in the Philosophy of Science.

(1-4) The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

270. Seminar in the History of Philosophy.

(1-4) The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

280. Seminar—Contemporary Figures in Philosophy. (1-4)

The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

284. Seminar in the Philosophy of**Mathematics. (1-4)** The Staff

Prerequisite: Graduate standing. This course may be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

286. Seminar in the Philosophy of Logic.

(1-4) The Staff

Prerequisite: Graduate standing. This course may

be repeated with consent of the instructor. Course may be taken for 1 to 4 units of work as determined by consultation with instructor.

594. Special Topics. (1-4) I, II, III.

Prerequisites: Graduate standing; consent of instructor.

Special seminar on research subjects of current interest.

596. Directed Reading and Research.

(1-4) I, II, III. The Staff

Prerequisites: Graduate standing; consent of instructor.

Written proposal must be approved by Department Chairman.

597. Individual Study for Master's and/or Ph.D. Examinations for Advancement to Candidacy. (1-12) I, II, III.

The Staff

598. Master's Thesis Research and**Preparation. (1-12) I, II, III.** The Staff**599. Ph.D. Dissertation Preparation.**

(1-12) I, II, III. The Staff

Prerequisite: Advancement to candidacy for the Ph.D. degree.

 PHYSICAL ACTIVITIES

Ernest N. Carter, Ed.D., *Supervisor of Physical Activities, Emeritus.*

Arthur J. Gallon, Ed.D., *Supervisor of Physical Activities.*

¹Willard M. Hammer, Ed.D., *Supervisor of Physical Activities.*

Mayville S. Kelliher, Ed.D., *Supervisor of Physical Activities (Chairman of the Department).*

Wilton M. Wilton, Ed.D., *Supervisor of Physical Activities.*

Arthur J. Aldritt, M.A., *Associate Supervisor of Physical Activities.*

Newell D. Breyfogle, M.A., *Associate Supervisor of Physical Activities.*

William F. Rowland, M.S., *Associate Supervisor of Physical Activities.*

F. Patricia Stock, M.S., *Associate Supervisor of Physical Activities.*

Zoltan von Somogyi, *Master Coach Soccer and Fencing, Royal Academy of Physical Education, Budapest, Hungary. Associate Supervisor of Physical Activities.*

Richard F. Baldizan, B.S., *Assistant Supervisor of Physical Activities.*

Nancy L. P. Button, M.A., *Assistant Supervisor of Physical Activities.*

²*Sherman G. Button, M.A., *Assistant Supervisor of Physical Activities.*

Sharon L. Evans, M.A., *Assistant Supervisor of Physical Activities.*

Bobbi L. Houghton, M.S., *Assistant Supervisor of Physical Activities.*

Guerrino Moro, M.S., *Assistant Supervisor of Physical Activities.*

Emerson W. Smith, B.A., *Assistant Supervisor of Physical Activities.*

Rudolph Suwara, M.S., *Assistant Supervisor of Physical Activities.*

—, *Junior Supervisor of Physical Activities.*

Mary R. Bloemsma, B.A., *Junior Supervisor of Physical Activities.*

Barbara J. Bonace, B.S., M.A., *Junior Supervisor in Physical Activities.*

Joyce M. Cassidy, A.B., *Junior Supervisor in Physical Activities.*

Paul T. Gray, Jr., B.S., *Junior Supervisor of Physical Activities.*

¹ Absent on leave, fall 1973.

² Absent on leave, winter 1974.

³ Absent on leave, spring 1974.

Sandra Lutz, M.A., *Junior Supervisor of Physical Activities.*

———, *Junior Supervisor in Physical Activities.*

Douglas J. Rex, B.A., *Junior Supervisor in Physical Activities.*

Samuel Adams, M.A., *Lecturer in Physical Activities.*

Ralph R. Barkey, M.A., *Lecturer in Physical Activities.*

John C. Birkett, B.A., M.A., *Lecturer in Physical Activities.*

Edward R. Doty, M.A., *Lecturer in Physical Activities.*

David F. Gorrie, M.S. *Lecturer in Physical Activities.*

Kenji K. Ota, *Black Belt, Lecturer in Physical Activities.*

The Department of Physical Activities offers to the general student body courses designed to contribute to the development and maintenance of physical fitness, recreational skills for use in leisure time and professional courses leading to the Athletic Coaching Minor Certificate.

Courses may be taken only once for credit.

No more than 6 units of Physical Activities 1—courses may be counted toward degree requirements.

A physical examination performed by your private physician will be reviewed by the Student Health Service.

FINES

Fines are imposed for each formal transaction necessitated by failure of the student to comply with the regulations of the department: (a.) failure to return equipment, or clothing, on or before the date posted for such return at the end of each quarter (replacement cost for each item); (b.) failure to close out lockers at the end of each quarter (\$5.00).

ATHLETIC COACHING MINOR

The Department of Physical Activities offers a minor in Athletic Coaching consisting of thirty (30) units. It is primarily designed for men and women who are interested in coaching at the secondary, or junior college level. The basic core requirement consists of 19–21 units with the remainder of the units from the selected Physical Activities courses. *Students desiring to enroll in the minor are requested to consult with the department counsellor prior to enrolling in classes.*

For information regarding the elementary, secondary, and junior college teaching credentials consult the Graduate School of Education.

Preparation for the minor: Recommended courses are Psychology 101, Speech 101.

Required core courses: P.A. 130A–C, P.A. 149, P.A. 150, P.A. 170 series (2 courses), P.A. 180.

Elective courses: Consult with department counsellor.

Physical Activities for Men and Women

Lower Division Courses

Fundamental Sports Activities.

The physical activities listed below are designed to provide a basic program by which students may improve their physical condition, secure useful neuromuscular development, and gain recreational skills. Any course listed may be elected for credit by juniors and seniors. The letter A indicates elementary level; B, intermediate level; and C, advanced level. Permission to take the intermediate and advanced courses without having previously completed the elementary course must be received from the De-

partment of Physical Activities. Classes meet two periods weekly and provide instruction and supervised practice in the fundamentals of each activity.

A course may be taken only once for credit.

1–1. Developmental Activities. (½) II.

A course providing particular emphasis on physical conditioning and reconditioning after injury designed especially for students participating in various intercollegiate sports activities.

/1–2A–B–C–D. Intercollegiate Baseball. (½) III.

1–3A–B–C. Archery. (½) I, II, III.

1–4A–B–C. Badminton. (½) I, II, III.

/1–5A–B–C. Baseball. (½) I, II, III.

/ Course open to men only.

1-6A-B-C. Basketball. (½) I, II, III.

\$1-7A-B-C. Boating and Sailing.
(½) I, II, III.

-1-8A-B-C. Body Toning and Conditioning for Women. (½) I, II, III.

A course designed to provide students with the opportunity to improve their basic physical condition, secure useful neuromuscular development, and gain recreational skills. (This course is open to women only.)

\$1-9A-B-C. Bowling. (½) I, II, III.

/1-10A-B-C. Boxing. (½) I, II, III.

1-11A-B-C-D. Intercollegiate Basketball.
(½) II.

1-12A-B-C. Judo. (½) I, II, III.

A course designed to provide students with the opportunity to improve their basic physical condition, secure useful neuromuscular development, and obtain combative defensive ability.

/1-13A-B-C. Saber Fencing. (½) Yr.

/1-14A-B-C-D. Intercollegiate Cross Country. (½) I.

1-15A-B-C-D. Modern Dance. (½) I, II, III.

1-16A-B-C. Folk Dance. (½) I, II, III.

1-17A-B-C. Social Dance. (½) I, II, III.

1-18A-B-C. Foil Fencing. (½) I, II, III.

1-20. Field Hockey. (½) III.

/1-22A-B-C-D. Intercollegiate Golf.
(½) III.

1-23A-B-C-D. Intercollegiate Gymnastics.
(½) II.

1-24A. Golf. (½) I, II, III.

\$1-24B-C. Golf. (½) I, II, III.

1-25A-B-C. Tumbling and Free Exercise.
I, II, III.

Affords a basic background for the sport of Gymnastics with a working knowledge of tumbling skills progressing from basic mat somersaults, kips, balances, etc., to intermediate and advanced routines as used in both the men's and women's competitive tumbling and free exercise events.

1-26A-B-C. Gymnastics Apparatus.
(½) I, II, III.

Offers basic, intermediate and advanced instruction for both men and women in all Olympic Events except for Free Exercise. Step by step progressions leading to competitive style routines are taught for each of the three ability levels.

1-27A-B-C. Trampoline. (½) I, II, III.

This specialized course offers:

- a. Basic (bounces, landings, positions somersaults),
- b. Intermediate (consecutive somersaults, twists, routines), and
- c. Advanced (multiple somersaults and twists, diphis, and routines). Gymnastic skills pertaining only to the trampoline event. No previous experience necessary for "A" sections.

-1-29A-B-C. Exercise and Figure Control.
(½) I, II, III.

/1-30A-B-C. Soccer. (½) I, II, III.

1-31A-B-C. Softball. (½) I, II, III.

1-33A-B-C-D. Intercollegiate Swimming.
(½) III.

1-34A-B-C. Swimming. (½) I, II, III.

1-35A-B-C. Synchronized Swimming.
(½) I, II, III.

1-36. Jogging Fitness. (½) I, II, III.
(a) Jogging (majority of work),
(b) Stair running,
(c) Indoor and outdoor apparatus,
(d) Information on various methods of obtaining cardiovascular fitness:
(1) Long slow distance,
(2) Interval training,
(3) Repetition training.

1-37A-B-C-D. Intercollegiate Tennis.
(½) III.

1-38A-B-C. Tennis. (½) I, II, III.

1-39A. Elementary Track and Field.
(½) I, II, III.

1-40A-B-C. Volleyball. (½) I, II, III.

1-41A-B-C. Water Polo. (½) I, II, III.

/1-42A-B-C-D. Intercollegiate Track and Field. (½) III.

/1-43A-B-C-D. M Weight Training. (½) I, II, III.

/1-44A-B-C. Wrestling. (½) I, II, III.

/1-45A-B-C-D. Intercollegiate Water Polo.
(½) I.

/1-46A-B-C-D. Intercollegiate Wrestling.
(½) II.

/1-47A-B-C-D. Intercollegiate Volleyball.
(½) III.

/ Course open to men only.

\$ A fee is charged for use of equipment and facilities not owned by the University. Direct payment will be made by the student.

- Course open to women only.

/1-48A-B-C-D. Intercollegiate Soccer.
(½) I.

1-99. Lifetime Activities Interest Class. (½)
I, II, III.

Prerequisites: Consent of instructor, space in class open, completion of A-B-C levels of related course and potential benefit to student.

Pre-enrollment not permitted.

This class makes it possible for a student to take instruction beyond the elementary, intermediate and advanced levels of any physical activity 1-class.

-4A-B-C. Life Fitness for Women. (1.5)

I, II, III.

The Staff

A course designed for women directed toward attaining physical fitness through an understanding and participation in an effective program of physical activities which can be continued throughout life. Stress will be placed on activities that contribute toward total health.

5A. Survival and First Aid (2) I, II, III.

The Staff

A course designed to provide the knowledge and ability to give immediate and temporary care to victims of an accident, or sudden illness, until the services of a physician can be obtained.

Successful completion of the course may lead to the Standard Red Cross Certificate.

5B. Survival and Advanced First Aid.

(2) I, II, III.

The Staff

Prerequisite: P.A. 5A, or Red Cross Standard First Aid Certificate.

This course covers the competent handling of the more difficult emergencies and problems in first aid. Successful completion of this course may lead to the Red Cross Advanced Certificate which is a prerequisite to the Instructor's First Aid Certificate.

-6A-B. Personal Defense for Women. (1.5)

I, II, III.

Mrs. Stock

Course presents situations in which a college girl would need to apply self-defense techniques, emphasizes "rules of avoidance and safety." Basic skills needed for self-defense will be included in the course.

7A-B-C. Life Fitness for Men. (1.5)

Year.

Mr. Breyfogle

A course designed for men directed toward attaining a basic understanding of bodily functions as they relate to exercise and increasing physical fitness through controlled activities.

30A-B-C. Appreciation of Sports.

(2) I, II, III.

Mr. Gallon

Lecture, demonstrations, and selected learning experiences for the general university student leading to an understanding and appreciation of athletics and recreational sports.

32A. Principles of Officiating. (1) I.

The Staff

The principles, ethics and standards of officiating

/ Course open to men only.

- Course open to women only.

Fall team and individual sports. Open to both men and women.

/32B. Principles of Officiating. (1) II.

Mr. Kelliher

The principles, ethics and standards of officiating Winter team and individual sports. Open to men only.

-32C. Principles of Officiating. (1) II.

Mr. Kelliher

A course open to women only leading to the securing of official's cards in Volleyball and Basketball.

32D. Principles of Officiating. (1) III.

Mr. Kelliher

Principles, ethics and standards of officiating Spring team and individual sports. Open to both men and women.

48. Lifesaving. (1) I, II, III.

Mr. Rowland

One lecture and one pool period per week. May lead to American Red Cross senior lifesaving certificate.

49A. Elementary Water Safety. (1) I, II, III.

Mr. Rowland

Prerequisite: P.A. 48A, or current American Red Cross Senior Lifesaving Certificate.

The course provides an opportunity for individuals to analyze and perform all swimming skills related to personal safety, self-rescue techniques, and small craft safety factors. Satisfactory completion of the course is a prerequisite for P.A. 49B.

49B. Intermediate Water Safety. (1) I, II, III.

Prerequisite: P.A. 49A.

Mr. Rowland

The course provides an opportunity for individuals to learn the theory and practice application of methods to organize and present aquatic materials. Satisfactory completion of the course may lead to the American Red Cross Water Safety Instructor's Certificate.

Upper Division Courses

101. Methods of Conditioning in Athletics.

(3) I, II, III.

Mr. Button

Prerequisite: P.A. 1-43C, or permission of instructor.

A course designed to present current methods and concepts of athletic training and conditioning. Emphasis is placed on fitness training programs, conditioning and progressive weight training specific to sports. Basic concepts for guiding training, conditioning, diet and nutrition in athletics are examined.

130A. Foundations of Athletics—

Problems Related to Athletics.

(3) I, II, III.

Mr. Gallon

Prerequisites: Coaching Minor student and consent of instructor.

An introduction to basic problems concerned with the management, administration and organization of interscholastic athletic programs. Particular emphasis is placed on programs as conducted under the jurisdiction of the California Interscholastic Federation.

130C. Foundation of Athletics—**Problems Related to Sports Psychology.**

(3) I, II, III. Mr. Hammer

Prerequisites: Coaching Minor student and consent of the instructor.

The application of data from psychological and related fields as it specifically applies to athletics, coaches, and sports activities. Principles and problems of coaching are examined. Human factors of performance, personality, motivation, learning and stress are presented.

130D. Foundation of Athletics—Problems Related to Sports and Society. III.

The Staff

Prerequisites: Registered Coaching Minor, and consent of the instructor.

A course designed to explore the problems relative to sport and society as they affect interscholastic participation and coaching.

136. Fundamental Physical Activities in The Elementary School Program.

(3) I, II, III. Miss Bonace

An analysis of the physical activities and progression in motor skills and activities for the elementary school program. This class satisfies a prerequisite for admission to Graduate School of Education.

149. Composite Sciences for Athletic**Coaching. (3) I, II, III.** Mr. Button

Prerequisites: Coaching Minor Student and consent of instructor.

An overview of the essential scientific disciplines, human anatomy, kinesiology, motor learning and nutrition as they apply to athletic coaching. The course is specifically designed for students desiring to coach athletic teams, but who lack a scientific background related to human motion.

150. Medical Aspects of Athletics.

(3) I, II, III. Mr. W. Wilton

Prerequisites: P.A. 149, Advanced First Aid card, and consent of instructor.

An introduction to the basic concepts and techniques in the prevention, diagnosis, treatment, and rehabilitation of athletic injuries. The practical application for prevention and the therapeutic measures relative to sports activities, the design and function of protective equipment are examined.

163A. Theory of Individual and Team Sports.

(3) I, II, III. Mrs. Stock

Prerequisites: Consent of instructor. In addition, P.E. Majors P.E. 101, 105; P.E. Minors P.E. 100A-B-C.

An analysis of performance and development of advanced skills in individual and team sports.

163B. Theory of Individual and Team Sports.

(3) I. Mrs. Stock

Prerequisite: 163A, or consent of instructor.

PHYSICSPaul H. Barrett, Ph.D., *Professor of Physics.*Herbert P. Broida, Ph.D., *Professor of Physics.*David O. Caldwell, Ph.D., *Professor of Physics.*

All 170 series (TECHNIQUES OF TEAM SPORTS) The technique of teaching individual and team skills of a variety of team sports and advanced analysis of that sport which is essential to a coach of competitive teams at the interscholastic and college level.

Prerequisite: Related Physical Activities course proficiency, or consent of instructor.

170A. Football. (3) II.

The Staff

170B. Basketball. (3) I. Mr. Barkey and Staff**170C. Baseball. (3) II.** Mr. Gorrie and Staff**170D. Track & Field. (3) II.**

Mr. Adams and Staff

170E. Water Polo. (3) I.

Mr. Rowland and Staff

170F. Diving & Swimming. (3) I.

Mr. Rowland and Staff

170G. Soccer. (3) I.

Mr. von Somogyi

170H. Gymnastics. (3) I.

Mr. Aldritt

170I. Volleyball. (3) III. Mr. Suwara and Staff**170J. Women's Field Sports. (3) III.**

The Staff

170K. Wrestling. (2) I.

Mr. Hammer

170L. Racquets Sports. (2) III.

Mr. Doty

170M. Golf. (2) II.

Mr. Breyfogle

180. Practicum—Physical Activities.

(3) I, II, III. Mrs. Stock, Mr. Wilton

Prerequisite: Consent of the instructor.

Actual experience in the conduct of activity classes, or athletic teams, under the supervision of an experienced instructor, or coach.

199. Independent Studies in Athletic**Coaching. (1 to 5 units.) I, II, III.**

The Staff

Prerequisite: Senior standing and consent of the instructor.

Open only to advanced students approved by the Coaching Minor adviser and faculty members involved. 199 credits are limited to no more than 5 in one quarter, and no more than 10 units total.

392. Student Teaching-Coaching. (3-6

variable) Year.

The Staff

A course designed to satisfy the California General Secondary Teaching Credential. Available only to students accepted in the School of Education.

Robert M. Eisberg, Ph.D., *Professor of Physics*.
 Jose R. Fulco, Ph.D., *Professor of Physics*.
 James B. Hartle, Ph.D., *Professor of Physics*.
 Vincent Jaccarino, Ph.D., *Professor of Physics*.
 Harold W. Lewis, Ph.D., *Professor of Physics*.
 Raymond F. Sawyer, Ph.D., *Professor of Physics*.
 Douglas J. Scalapino, Ph.D., *Professor of Physics*.
 William C. Walker, Ph.D., *Professor of Physics (Department Chairman)*.
 Paul H. Lee, A.B., *Adjunct Professor of Physics*.
 Virgil B. Elings, Ph.D., *Associate Professor*.
 Leonard H. Hall, Ph.D., *Associate Professor*.
 Daniel W. Hone, Ph.D., *Associate Professor*.
 Rollin J. Morrison, Ph.D., *Associate Professor*.
 Stanton J. Peale, Ph.D., *Associate Professor*.
 Glen E. Schrank, Ph.D., *Associate Professor*.
 Robert L. Sugar, Ph.D., *Associate Professor*.
 David S. Cannell, Ph.D., *Assistant Professor*.
 Paul K. Hansma, Ph.D., *Assistant Professor*.
 Burton N. Kendall, Ph.D., *Assistant Professor*.



John Botke, Ph.D., *Lecturer in Physics*.
 Christopher Flaten, Ph.D., *Lecturer in Physics*.
 Alan King, Ph.D., *Lecturer in Physics*.
 David Phillips, Ph.D., *Lecturer in Physics*.
 Terrance Sejnowski, Ph.D., *Lecturer in Physics*.

The Department of Physics offers programs leading to either the B.A. or B.S. degree. The B.A. program is intended for students who wish to obtain a degree in physics as preparation for a variety of careers. The B.S. program is primarily intended for students who anticipate doing graduate work in physics.

THE DEGREE OF BACHELOR OF ARTS GENERAL EDUCATION

Students are expected to fulfill the General Education requirements of the College of Letters and Science for the B.A. degree as specified in this catalog. There is no foreign language requirement.

PREPARATION FOR THE MAJOR

Physics majors are normally expected to complete the following courses in their first two years: Physics 8A, AL, 8B, BL, 8C, CL, 5; Mathematics 3A–B–C, 5A–B–C; Chemistry 1A, AL, 1B, BL, 1C, CL. Although not required, Physics Y is strongly recommended. As a special case, with departmental approval, Physics 6A–B–C or Physics 7A–B–C may be substituted for Physics 8A–B–C.

THE MAJOR

The College of Letters and Science requires 60 upper division units for graduation, of these at least 36 must be in courses approved for the major. The Physics Department requires that these include a minimum of 18 units of upper division Physics courses plus 6 units of upper division Physics laboratory courses (at least one quarter of laboratory work other than Physics 127A–B–C is required). To ensure that the student is able to plan a program that best suits his or her individual needs, the Physics Department will assign a faculty adviser to each student at the start of the sophomore year and will require that the student meet with the adviser to plan a major program. Transfer students will be assigned an adviser upon entry and should consult him at the earliest possible time.

THE DEGREE OF BACHELOR OF SCIENCE

GENERAL EDUCATION

Students are required to fulfill the General Education Requirements of the College of Letters and Science for the Bachelor of Science degree as specified in this catalog. A request for deletion of the Foreign Language requirement for the B.S. degree has been initiated and approval is expected for 1973-74.

PREPARATION FOR THE MAJOR

Physics majors are normally expected to complete the following courses in their first two years: Physics 8A, 8AL, 8B, 8BL, 8C, 8CL, 5; Mathematics 3A-B-C, 5A-B-C; Chemistry 1A, AL, 1B, BL, 1C, CL. Although not required, Physics Y is strongly recommended. As a special case, with departmental approval, Physics 6A-B-C or Physics 7A-B-C may not be substituted for Physics 8A-B-C.

THE MAJOR

The College of Letters and Science requires 60 upper division units for graduation. Of these at least 36 must be in courses approved for the major. The minimum requirements for the B.S. degree in Physics are 18 units of upper division Physics courses plus 6 units of upper division Physics laboratory courses (at least one quarter of laboratory work other than Physics 127A-B-C is required). Students in the B.S. program will normally be expected to take more than the minimum of required upper division courses. It is strongly recommended that those students who plan to do graduate work in physics include Physics 105A-B, 110A-B-C, 115A-B-C, and Mathematics 124A-B-C in their programs. To ensure that the student is able to plan a program that best suits his or her individual needs, the Physics Department will assign a faculty adviser to each student at the start of the sophomore year and will require that the student meet with the adviser to plan a major program. Transfer students will be assigned an adviser upon entry and should consult him at the earliest possible time.

SUGGESTED COURSE SCHEDULE FOR FRESHMAN STUDENTS IN THE PHYSICS BACHELOR OF ARTS OR BACHELOR OF SCIENCE PROGRAM

<i>First Quarter</i>		<i>Second Quarter</i>		<i>Third Quarter</i>	
<i>Units</i>	<i>Course</i>	<i>Units</i>	<i>Course</i>	<i>Units</i>	<i>Course</i>
5	Physics 8A, 8AL	5	Physics 8B, 8BL	5	Physics 8C, 8CL
2	Physics Y	4	Math 3B	4	Math 3B
4	Math 3A	4	English 1B	$\frac{1}{2}$	PA
4	English 1A	$\frac{1}{2}$	PA	6-8	Electives
$\frac{1}{2}$	PA	2-4	Electives		

GRADUATE PROGRAM IN PHYSICS

The Department offers work leading to the Ph.D. and M.A. degrees in physics. A candidate for admission to the Ph.D. and M.A. programs must present an undergraduate major in physics, or its equivalent and his score on the Graduate Record Examination. A candidate for admission to the scientific instrumentation program must present an undergraduate major in natural sciences, or engineering or its equivalent.

Entering students in the M.A. and Ph.D. programs will be appraised by means of examination during registration week; where necessary, supplementary courses will be required.

THE DEGREE OF MASTER OF ARTS

Requirements

1. Completion of 36 quarter units of course work, selected with the approval of the departmental graduate adviser. A minimum of 24 units must be in graduate courses (200 series) in

physics; the remainder may be selected from upper division or graduate courses in mathematics, chemistry, engineering, or physics.

2. The student must demonstrate a satisfactory level of teaching proficiency in undergraduate physics courses. Normally three quarters are required to satisfy this requirement.

3. The student must demonstrate proficiency in Fortran or a comparable computer language.

4. Completion of Plan II: comprehensive examination.

THE DEGREE OF MASTER OF SCIENCE IN SCIENTIFIC INSTRUMENTATION

Requirements

1. Completion of 36 quarter units of course work, which must include Physics 240A-B-C, 246A-B-C, 247, 248A-B-C and 6 units of related directed studies. The remainder may be selected from upper division or graduate courses in any approved department.

2. There is no language requirement for this degree.

3. Satisfactory completion of an oral examination covering the student's course work and project.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Requirements

1. Satisfactory completion of a set of comprehensive graduate qualifying examinations covering the major fields of physics.

2. The student must demonstrate a satisfactory level of teaching proficiency in undergraduate physics courses, or other courses at the discretion of the chairman. Normally three quarters are required to satisfy this requirement.

3. The student must demonstrate proficiency in Fortran or a comparable computer language.

4. Completion and oral defense of a doctoral dissertation.

TEACHING CREDENTIALS

Either a major or a minor in physics may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with the designated counselor in the Graduate School of Education.

ASTRONOMY

Lower Division Courses

1. Basic Astronomy. (4) I, II, or III.

Mr. Eisberg

The nature and structure of the solar system, our local galaxy, and the universe.

2. History of the Universe. (4) III.

Prerequisite: Astronomy 1.

Mr. Hartle

The large scale structure of the universe, its origin, and evolution. The birth of the sun and the planets and their subsequent evolution. The conditions necessary for life elsewhere in the universe and the probabilities of its existence and detection.

NATURAL SCIENCE

Lower Division Course

1A-1B-C. Contemporary Natural Science.

(4-4-4) 1A (1), 1B (II), 1C (III).

Prerequisite: 1A is prerequisite to 1B; 1B is prerequisite to 1C.

A unified survey of important concepts in the natural sciences and their technological and social implications, sponsored jointly by the Department of Physics, Chemistry and Biological Sciences.

Not open to students who have completed a college level course in biological or physical science. Exceptions can be made with consent of the instructor and approval of the Dean.

General Education credit for this course sequence

normally will be granted only if the entire series is passed. Exceptions can be made with consent of the instructor and approval of the Dean. Upon completion of the three courses, General Education requirements 5a, 5b, and 5c will be satisfied.

PHYSICS

Lower Division Courses

Y. Prelude to Physics. (2) I. Mr. Walker

A survey of physical phenomena and of the physical laws which govern them. Intended primarily as a qualitative overview of physical phenomena and current research. Does not satisfy the general education requirement.

5. Thermodynamics and Statistical Physics.

(4) I. Mr. Hall

Prerequisites: Physics 8A-B-C, Mathematics 5A to be taken concurrently.

Thermodynamics; statistical physics; kinetic theory.

6A-B-C. Physics for Biological Scientists.

(3-3-3) Yr. Mr. Cannell

Prerequisite: One quarter of calculus (may be taken concurrently).

Mechanics, electricity and magnetism, optics, thermodynamics; atoms, molecules, nuclei, and solids.

6AL-BL-CL. Experimental Physics for

Biological Scientists. (1-1-1) Yr.

The Staff

Prerequisite: Concurrent registration in 6A-B-C, or consent of the instructor.

Experiments in: the mechanical, electrical and thermal properties of matter, the behavior of light, and quantum phenomena with application to the biological sciences.

7A-B-C. Physics for Engineers. (4-3-3) Yr.

Mr. Barrett

Prerequisites: One year of college calculus and Mechanical Engineering 10.

7A. Electricity and magnetism.

7B. Electromagnetic waves; physical and geometric optics; acoustics.

7C. Modern physics; quantum mechanics; atomic, solid state and nuclear physics.

7BL-CL. Experimental Physics for

Engineers. (1-1) II, III.

The Staff

Prerequisite: Concurrent registration in 7B-C.

Experiments in: electric and magnetic deflection of electrons, use of the oscilloscope, electrical-mechanical analogs, microwaves, quantum effects, and radioactivity.

8A-B-C. Physics for Science Majors.

(4-4-4) Yr. Mr. Morrison

Prerequisite: Concurrent registration in the Math 3A-B-C sequence.

Classical mechanics; special relativity; heat; electricity and magnetism; waves and optics.

8AL-BL-CL. Experimental Physics for

Science Majors. (1-1-1) Yr. The Staff

Prerequisite: Concurrent registration in 8A-B-C.

Experiments in: mechanical conservation laws, dynamics of moving bodies, use of the oscilloscope, deflection of electrons, electrical-mechanical analogs, microwave transmission and diffraction, optics.

10. Concepts of Physics. (4) II or III.

Mr. Jaccarino

Prerequisite: Not open for degree credit to students who have completed Natural Science A.

A survey of the important concepts in physics for the non-science major.

11. Physics of Sound. (4) I Mr. Hartle

Introduction to the physics of sound; elementary mechanics, harmonic motion, and waves; acoustics of speech and hearing; physics of musical instruments.

Upper Division Courses

100. Science, the University and Society.

(2) I. Mr. Jaccarino

A collaboration by members of the various science departments. Lectures and panel discussions. 1) Examination of selected scientific problems of relevance to society. 2) Discussion of: (a) the organization and control of scientific research, (b) scientific advice to the government, (c) science in the university.

105A-B. Classical Mechanics. (3-3) II, III.

Mr. Flaten

Prerequisites: Physics 7C or 8C and concurrent registration in Math 5B, or its equivalent.

Dynamics of point particles, conservation laws, motion of rigid bodies, Lagrangian formulation of mechanics, small vibrations and normal modes.

110A-B-C. Electromagnetism. (3-3-3) Yr.

Mr. Schrank

Prerequisites: Physics 7C or 8C and Math 5C.

Electrostatics, magnetostatics, electric and magnetic properties of materials, Maxwell's equations, electromagnetic waves, radiation from charged particles, special relativity.

115A-B-C. Quantum Mechanics. (3-3-3)

I, II, III. Mr. Fulco

Prerequisites: Physics 8C and Math 124B.

Introductory quantum mechanics: Schrödinger equation and applications; angular momentum and spin; quantum mechanical description of nuclei, atoms and molecules. Emission and absorption of radiation, theory of atomic and molecular states, and selection rules. Quantum statistics and band theory of solids.

115AG-BG-CG. Quantum Mechanics.

(3-3-3) I, II, III. The Staff

Introductory quantum mechanics: Schrödinger equation and applications; angular momentum and spin; quantum mechanical description of nuclei, atoms and molecules. Emission and absorption of radiation, theory of atomic and molecular states, and selection rules. Quantum statistics and band theory of solids. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 115A-B-C, or the respective part thereof in this institution.

116A. Elementary Quantum Mechanics. (4) I.**Mr. Caldwell**

Prerequisite: Physics 7C or 8C.

The basic principles of quantum mechanics, the Schrödinger equation, angular momentum and spin, exclusion principle, emission and absorption of radiation, scattering.

116B. Modern Applications of Quantum**Mechanics. (4) II.****Mr. Caldwell**

Prerequisite: Physics 116A or consent of instructor.

The application of quantum mechanics to the study of spectroscopy, solid state physics, solid state electronic devices, lasers and holography, nuclear magnetic resonance, superconductivity.

116C. Nuclei and Elementary Particles.**(4) III.****Mr. Caldwell**

Prerequisite: Physics 116A or consent of instructor.

Nuclear models, nuclear decay and nuclear reactions, elementary particles, the symmetries and conservation laws of physics.

117. Nuclear Physics for Engineers. (4) III.**Mr. Caldwell**

Prerequisite: Physics 116A or consent of instructor.

Nuclear models, fundamentals of nuclear fission, plasmas, electromagnetic containment of charged particles, nuclear fusion, nuclear radiation, radiation shielding, interaction of charged particles with matter, biological effects of radiation.

119. Statistical Mechanics and Thermodynamics. (4) I.**Mr. Hall**

Prerequisite: Physics 7C or 8C.

Kinetic theory of statistical ensembles. Boltzmann, Fermi-Dirac and Bose-Einstein distribution laws. Relation of thermodynamic variables and microscopic properties.

123. Solid State Physics. (3) II.**Mr. Jaccarino**

Prerequisite: Physics 115A or 116A.

Classification of solids, crystal symmetry, lattice dynamics; thermal, electric, and magnetic properties; band theory of electronic states, imperfections, superconductivity.

123G. Solid State Physics. (3) II.**The Staff**

Classification of solids, crystal symmetry, lattice dynamics; thermal, electric, and magnetic properties; band theory of electronic states, imperfections, superconductivity. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 123, or the respective part thereof in this institution.

124. Nuclear Physics. (3) III.**Mr. Kendall**

Prerequisite: Physics 115B or 116B.

Properties of stable nuclei. Nuclear models. Nuclear decay and nuclear reactions, including fusion and fission.

125. Elementary Particle Physics. (3) III.**Mr. Kendall**

Prerequisite: Physics 115B or 116B.

Phenomenology of the particles of high energy physics and their strong, electromagnetic, and weak interactions. Fundamental symmetries, invariance principles, and the associated quantum numbers.

126. Plasma Physics. (4) II.**The Staff**

Introduction to the physics of the fully ionized gas. Motion of charged particles in electric and magnetic fields, magnetohydrodynamics, equilibrium plasma configurations and their stability, waves in plasmas. Examples selected from the space and astrophysical sciences and controlled fusion research.

126G. Plasma Physics. (4) II.**The Staff**

Introduction to the physics of the fully ionized gas. Motion of charged particles in electric and magnetic fields, magnetohydrodynamics, equilibrium plasma configurations and their stability, waves in plasmas. Examples selected from the space and astrophysical sciences and controlled fusion research. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 126, or the respective part thereof in this institution.

127A-B-C. Electronics for Science Majors.**(2-2-2) Yr.****Mr. Hansma**

Prerequisites: 6 units of calculus and 6 units of physics.

Circuit theory, semiconductor device characteristics, feedback amplifiers, oscillators, analog computers, operational amplifiers, digital and logic circuits, integrated circuits, fast pulse technique.

128I-129L-130L. Advanced Experimental**Physics. (2-4 per quarter) Yr.****Mr. King**

Prerequisites: Physics 5, or 8C, and 110A-B-C. (The latter may be taken concurrently.)

Selected experiments in contemporary physics, e.g., holography; laser light scattering; optical pumping; semiconductors; superconductivity; magnetic resonance; Mossbauer effect; Beta and Gamma ray spectroscopy; nuclear counting techniques.

133. Astrophysics. (4) II.**Mr. Sejnowski**

Prerequisite: Physics 5, or 8C, and 110A-B-C (the latter may be taken concurrently).

Selected studies of the physical processes taking place in the solar system, the stars, the galaxies, and the universe.

133G. Astrophysics. (4) III.**The Staff**

Selected studies of the physical processes taking place in the solar system, the stars, the galaxies and the universe. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 133, or the respective part thereof in this institution.

141. Optics. (4) I.**Mr. Walker**

Prerequisite: Physics 7C or 8C.

Modern geometrical and physical optics. Polarization, coherence, interference and diffraction phenomena. Fourier transform spectroscopy, intensity correlation interferometry, spatial filtering, and holography. Selected topics on lasers, light scattering and quantum optics as time permits.

141G. Optics. (4) I.**The Staff**

Modern geometrical and physical optics. Polarization, coherence, interference and diffraction phenomena. Fourier transform spectroscopy, intensity correlation interferometry, spatial filtering, and holography. Selected topics on lasers, light scattering and quantum optics as time permits. Open only by consent of the Physics Graduate Adviser to graduate students who have not taken 141, or the respective part thereof in this institution.

142L. Experimental Research in Molecular and Solid State Physics. (2) I, II, III.

Mr. Broida

Prerequisites: Physics 7C or 8C and consent of instructor.

This course offers qualified undergraduates the opportunity to work in research laboratories assisting the faculty and graduate students in experimental research in molecular and solid state physics. May be repeated for credit up to six units.

143L. Experimental Research in Nuclear and Elementary Particle Physics. (2) I, II, III.

Mr. Elings

Prerequisites: Physics 5, 7C or 8C, and consent of the instructor.

This course offers qualified undergraduates the opportunity to work in research laboratories assisting the faculty and graduate students in experimental research in nuclear and elementary particle physics. May be repeated for credit up to six units.

198. (01-27) Directed Reading. (1-4), I, II, III.

The Staff

Prerequisite: Consent of the instructor.

Each staff member has his own directed reading course identified by the same number code as the 599 series.

199. (01-27) Independent Studies in Physics. (1-5) I, II, III.

The Staff

Prerequisite: Consent of the instructor.

Directed individual study open to qualified seniors in the Department of Physics. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total. Each staff member has his own independent studies course identified by the same number code as the 599 series.

Graduate Courses**200A-B-C. Mathematical Methods of**

Physics, (3-3-3) Yr.

Mr. Fulco

Mathematical techniques useful in physics, including the theory of functions of a complex variable, linear vector spaces, Fourier transforms, tensor analysis, elementary group theory, partial differential equations of physics, boundary value problems and integral equations.

205. Classical Mechanics. (3) I.

Mr. Sejnowski

Derivation of the equations of Lagrange, Hamilton, and Hamilton-Jacobi by variational principles. Application of these equations to problems involving two bodies, rigid bodies, small oscillations, and continuous systems.

206. Mechanics of Continuous Media. (3)

Prerequisite: Physics 205.

The Staff

Dynamics of incompressible and compressible fluids. Supersonic and hypersonic flow, shockwaves. Viscosity. Elasticity.

210A-B-C. Electromagnetic Theory. (3-3-3) II, III, I.

Mr. Sugar

Prerequisite: Physics 205.

Electrostatics, magnetostatics, boundary value problems, time varying fields, Maxwell's equations,

multipole fields, relativistic particle dynamics, scattering, radiation.

215A-B-C-D. Quantum Mechanics.

(3-3-3-3) I, II, III.

Mr. Lewis

Fundamental principles; wave mechanics, matrix mechanics, perturbation theory; spin and orbital angular momentum; applications to atomic, molecular or nuclear systems; the theory of scattering. Emission and absorption of radiation.

217A. Advanced Quantum Mechanics. (3) II.

Prerequisite: Physics 215B.

Mr. Sawyer

Second quantization. Nonrelativistic quantum field theory. Application to many body or fundamental particle problems.

217B. Advanced Quantum Mechanics.

(3) III.

Mr. Sawyer

Prerequisite: Physics 217A.

Introduction to relativistic quantum field theory; theory of the free field; perturbation theoretic techniques; application to quantum electrodynamics.

217C. Advanced Quantum Mechanics.

(3) I.

Mr. Fulco

Prerequisite: Physics 217B.

Theory of high energy particles; the content will vary. Possible topics are: S-matrix theory of the strong interactions, scattering at very high energies, weak interactions, particle symmetries.

219. Statistical Mechanics. (3) I.

Mr. Sejnowski

Prerequisites: Physics 205 and 215A.

Classical and quantum statistics, ensembles, entropy, H-theorem. Transport properties, critical phenomena, cluster techniques. Applications.

223A-B. Solid State Physics. (3-3) II, III.

Mr. Hone

Prerequisite for 223A: Physics 215A. Prerequisite for 223B: Physics 215B.

Phenomenology and theory of the solid state. Symmetry, crystals, phonons, and band theory of metals. Transport properties and optical, magnetic, thermal, and dielectric properties. Low temperature properties, including superconductivity. Excitons, quasiparticles, and introduction to many-body theory.

224. Nuclear Physics. (3) III.

Mr. Sugar

Prerequisite: Physics 215B.

Nuclear forces. Nuclear models. Nuclear reactions and decay.

225. Elementary Particle Physics. (4) III.

Mr. Fulco

Phenomenology of the particles of high energy physics and their strong, electromagnetic, and weak interactions. Fundamental symmetries, invariance principles, and the associated quantum numbers. Where material of this course overlaps that of Physics 125, combined lectures will be given.

226A-B. Physics of Plasmas. (3-3) II, III.

Prerequisite: Physics 210C.

The Staff

Elementary interactions in plasmas, plasma kinetics, transport properties, plasma oscillations, magnetohydrodynamics, and magnetohydrodynamic waves.

227A. Principles of Magnetic Resonance.

(3) I. The Staff

Prerequisite: Physics 215A, or consent of the instructor.

Elements of the theory of magnetic resonance. The Bloch equations, macroscopic aspects of spin magnetism, interacting spin systems, relaxation phenomena and the method of moments. Hyperfine interactions in atoms and solids. Nuclear and electron spin resonance. Ferro- and antiferro-magnetic resonance.

231. Relativity. (4) II. Mr. Hartle

Prerequisites: Physics 205 and 210C.

Riemannian geometry; gravity as a metric phenomenon. The Einstein field equations, their properties and solutions in cases of physical interest.

240A-B-C. Instrumentation Seminar. (3-3-3)

Yr. Mr. Broida

A seminar course consisting of a series of lectures by the staff and visiting lecturers on the basic principles of scientific instrumentation and student presentations of proposed solutions of instrumentation problems. A forum for student discussion of their research.

246A-B-C. Laboratory of Instrumentation.

(2-2-2) Yr. Mr. Elings

Students participate in the design and construction of instruments to be used in laboratories in various departments on campus. In this course the students become involved in instrumentation problems in the scientific areas of their choice.

247. Research Project in Instrumentation.

(1-3) I, II, III. Mr. Elings.

Prerequisite: Physics 246C.

From his experience in 246, the student will select one of the cooperating research groups using instrumentation on the campus and will design and construct an instrument or system to be used by the selected research group.

248A-B-C. Instrumentation Electronics.

(2-2-2) Yr. The Staff

A practical introduction to laboratory use of circuit analysis, discrete semiconductor devices, analog integrated circuits, signal averaging, sensors and transducers, digital integrated circuits, digital systems, small computers, digital interfaces, data recording systems.

250. Advanced Topics in Astrophysics.

(3) I, II, or III. The Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

251. Advanced Topics in High Energy

Physics. (3) I, II, or III. The Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

252. Advanced Topics in Solid State Physics.

(3) I, II, or III. The Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

253. Advanced Topics in Optics and

Spectroscopy. (3) I, II, or III. The Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

254. Advanced Topics in Nuclear Physics.

(3) I, II, or III. The Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

255. Advanced Topics in Theoretical Physics.

(3) I, II, or III. The Staff

Prerequisite: Consent of the instructor.

The course will vary from year to year according to the currents of the times. Course may be repeated with a different topic.

260A. Seminar in Advanced Topics.

(1) I, II, III. The Staff

260B. Seminar in Nuclear Physics.

(1) I, II, III. The Staff

260C. Seminar in Molecular Physics.

(1) I, II, III. The Staff

260D. Seminar in Theoretical Physics.

(1) I, II, III. The Staff

260E. Seminar in Solid State Physics.

(1) I, II, III. The Staff

260F. Seminar in High Energy Physics. (1)

I, II, III. The Staff

594. (01-27) Special Topics.

(1-4) I, II, III. The Staff

Prerequisite: Consent of the instructor.

Special seminar on research subjects of current interest. Each staff member has his own seminar identified by the same number code as the 599 series.

595. (01-27) Group Studies. (1-6)

I, II, III. The Staff

Prerequisite: Consent of the instructor.

Each staff member has his own group studies course identified by the same number code as the 599 series.

596. (01-27) Directed Reading and Research.

(2-6) I, II, III. The Staff

Prerequisite: Consent of the instructor.

Individual tutorial. Reading and research in special topics including work done as the basis for the dissertation. Each staff member has his own directed reading and research course identified by the same number code as the 599 series.

597. Preparation for the Qualifying**Examination, (1-4) I, II, III. The Staff****Prerequisite:** Consent of the graduate adviser.

Directed group or individual preparation for the doctoral qualifying examination. No unit credit is allowed toward advanced degrees.

599. (01-27) Dissertation Preparation.**(1-6) I, II, III. The Staff****Prerequisite:** Consent of the instructor.

This course is reserved for writing the dissertation. May be repeated for credit up to 12 units. Each staff

member has his own research course identified by the following number code:

P. H. Barrett	01	V. Jaccarino	12
H. P. Broida	02	B. N. Kendall	13
J. Botke	23	A. R. King	25
D. O. Caldwell	03	H. W. Lewis	14
D. S. Cannell	04	R. J. Morrison	15
R. M. Eisberg	05	S. J. Peale	16
V. B. Elings	06	R. F. Sawyer	17
C. Flaten	24	D. J. Scalapino	18
J. R. Fulco	07	G. E. Schrank	19
L. H. Hall	08	T. J. Sejnowski	26
P. Hansma	09	R. L. Sugar	21
J. B. Hartle	10	W. C. Walker	22
D. W. Hone	11	P. Lee	27

** POLITICAL SCIENCE**¹Stanley V. Anderson, Ph.D., *Professor of Political Science.*Gordon E. Baker, Ph.D., *Professor of Political Science.*⁴Roger H. Davidson, Ph.D., *Professor of Political Science.*³William Ebenstein, Ph.D., LL.D., *Professor of Political Science.*^{1,2}Stephen S. Goodspeed, Ph.D., *Professor of Political Science.*³Wolfram Hanrieder, Ph.D., *Professor of Political Science.*Raghaven Iyer, D.Phil., (Oxon.), *Professor of Political Science.*Dean Mann, Ph.D., *Professor of Political Science (Chairman of the Department).*³Peter H. Merkl, Ph.D., *Professor of Political Science (Acting Chairman of the Department).*C. Herman Pritchett, Ph.D., *Professor of Political Science.*^{2,3}Henry A. Turner, Ph.D., *Professor of Political Science.*Robert G. Wesson, Ph.D., *Professor of Political Science.*John E. Moore, Ph.D., *Associate Professor of Political Science.*³Robert C. Noël, Ph.D., *Associate Professor of Political Science.*Haruhiro Fukui, Ph.D., *Associate Professor of Political Science.*⁴Michael Gordon, Ph.D., *Associate Professor of Political Science.*A. E. Keir Nash, Ph.D., *Associate Professor of Political Science.*Thomas S. Schrock, Ph.D., *Associate Professor of Political Science.*Carl C. Hetrick, Ph.D., *Assistant Professor of Political Science.*Alan P. L. Liu, Ph.D., *Assistant Professor of Political Science.*R. J. Snow, Ph.D., *Assistant Professor of Political Science.*¹Alan J. Wyner, Ph.D., *Assistant Professor of Political Science.*Charles Ornelas, *Lecturer in Political Science.*Joseph Lodge, J.D., *Lecturer in Political Science.***THE MAJOR**

(The following requirements for major in Political Science are being modified; all incoming and interested students are urged to obtain the revised requirements from the office of the Department of Political Science at the beginning of Fall Quarter, 1973).

1. Required lower division work in Political Science: Political Science 12 or 5 and 10; Political Science 45 or Political Science 25††.

2. Required work in cognate disciplines: 5 courses from at least *three* of the disciplines¹ Absent on leave, Fall 1973.² Absent on leave, Winter 1973.³ Absent on leave, Spring 1974.⁴ Absent on leave, 1973-74.

†† Students planning to major in Political Science are encouraged to enroll in Political Science 12. Those students selecting Political Science 25 are also expected to complete at least one upper division comparative government course. With the Department's approval, the Political Science 45 requirement may be satisfied through previous course work in comparative government.

listed below, including at least one course in History. Recommended courses are as indicated; substitutions may be made with the consent of the Department of Political Science.

Anthropology 2 (or 101), 106, 108, 113.

Economics 1,2 (or 109), 110, 120, 130, 175.

History 4A–B–C, 8AB, 17A–B, 19, 72, 81, 86, 89, 105

Psychology 1 (or 101), 102

Sociology 1, 2, (or 101)

3. Required upper division work in Political Science: 36 units from at least *four* of the following fields:‡ (upper division courses are not open to freshman)

1. Political Theory (101, 110, 111, 113, 117, 187, 188, 189).

2. Public Law (115, 117, 165, 166, 167).

3. Politics (106, 107, 118, 152, 153, 154, 155, 156, 157, 172, 173, 174, 175, 176, 179).

4. Public Administration (175, 180, 181, 184, 185, 193).

5. International Relations (121, 122, 124, 125, 126, 127, 128, 129, 131, 132, 134).

6. Comparative Politics (104, 105, 126, 128, 129, 130, 131, 132, 133, 134, 135, 136, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148A–B, 149, 150, 184).

COMBINATION SOCIAL SCIENCES MAJOR

Students interested in obtaining a major in the combined Social Sciences, see listing under “Social Sciences,” in this catalog.

THE DEGREE OF MASTER OF ARTS

The M.A. degree in political science is offered both under Plan I, the thesis plan, and Plan II, the comprehensive examination plan. The department normally operates under Plan II, but in exceptional cases the student, with the consent of the department chairman, may follow Plan I. Applicants are encouraged to request from the Department a copy of the current “Graduate Program Statement” which offers a more detailed explanation of the program. In addition applicants are generally expected to submit results of the Graduate Record Examination.

Plan I. Thesis Plan

1. Candidates must complete at least 36 units of course work, including credit for the thesis.

2. The required course work will normally be completed in graduate courses in political science. A maximum of 6 units may be in 598 courses representing credit for research underlying the thesis. For certain programs, and with the approval of the student’s adviser, a maximum of 8 of the remaining units making up the required total of 36 may be included from graduate courses in related disciplines.

3. Candidates will be required to complete, in graduate standing, course work in three of the political science fields.

4. Before certifying a student for formal advancement to candidacy, the department reserves the right to satisfy itself as to the candidate’s proficiency by means of special written or oral examinations.

Plan II. Comprehensive Examination Plan

1. Candidates must complete at least 36 units of course work.

2. The required course work will normally be completed in graduate courses in political science. For certain programs, and with the approval of the student’s adviser, a maximum of 8 units may be included from graduate courses in a related discipline.

3. Candidates will be required to complete, in graduate standing, course work in three of the political science fields.

‡Political Science 100 does not count toward the 36-unit upper division requirement for the major. In exceptional cases, the major adviser may approve the inclusion of an additional 4 units from cognate disciplines as part of the total 36 units.

4. Candidates must pass oral examinations in two fields, in addition to having completed two graduate courses or seminars outside of his examination fields.

THE DOCTORAL PROGRAM

Admission: Completion of the Master of Arts degree or its equivalent is the normal prerequisite for admission to the doctoral program. Admission is by approval of the Graduate Dean and by the departmental chairman. Only strong performance in previous undergraduate or graduate studies will be considered as justification for undertaking work toward the doctorate. Applicants are encouraged to request from the Department a copy of the current "Graduate Program Statement" which offers a more detailed explanation of the program. In addition, applicants are generally expected to submit results of the Graduate Record Examination.

Specific Requirements for the Ph.D. Degree: The award of the degree of Doctor of Philosophy is not based merely on the fulfillment of technical requirements, but signifies that the Department of Political Science is satisfied that the candidate is professionally qualified as a political scientist, competent to carry on scholarly research and academic instruction in his fields of specialization. The following specific requirements should be taken in this context.

1. *Residence.* The University of California requires a minimum of two years' full-time residence in graduate study for the doctorate, at least one year of which must be spent in continuous residence at the University. One year of this residence is required after the student has been formally advanced to candidacy, i.e., upon the successful completion of the qualifying examinations. Normally, students will require two years of resident graduate study at this or other universities before taking the qualifying examinations.

2. *Languages.* The candidate must demonstrate a thorough knowledge of one foreign language or competence in the use of specialized research methods. Whatever option is chosen, it must be completed prior to taking the written qualifying examinations. Further details may be found in the "Graduate Program Statement."

3. *Fields of Study and Qualifying Examinations.* The work offered in political science falls into six fields: political Theory, Public Law, Politics, Public Administration, International Relations, and Comparative Government (including area studies). Political Science 203 or its equivalent is normally required of all Ph.D. candidates. Each Ph.D. candidate will be expected to demonstrate competence in three fields of Political Science by means of written qualifying examinations. In addition, he must take a minimum of three graduate courses or seminars or their equivalent in a fourth field of Political Science. Upon the recommendation of his advisory committee and approval of the Graduate Adviser, a student may substitute a field from a related discipline when such a substitution will enhance the overall competence of the student in his major field within Political Science. Other than in exceptional circumstances, this outside field may be substituted only for the field of Political Science normally satisfied by course work, and must be completed prior to taking the written qualifying examinations in the other three fields.

After successful completion of the written qualifying examinations the student will take an oral examination which will explore his overall competence as a political scientist. Particular emphasis will be placed on his major field and on important substantive, epistemological, or methodological topics and problems in the discipline.

4. *The Dissertation.* With the advice and approval of the doctoral committee, each student will select a dissertation topic in his major field of specialization. The dissertation must be based on original research and must make a significant contribution to knowledge in the field.

TEACHING CREDENTIALS

Either a major or a minor in Political Science may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Political Science and in the Graduate School of Education.

POLITICAL SCIENCE

Lower Division Courses

5. American Government: The Constitutional System. (4) I, II, III. The Staff

The functions, development, and interpretation of the American Constitution; federalism; the role of the Supreme Court; civil liberties and civil rights. For lower division students only.

10. American Government: The Political Process. (4) I, II, III. The Staff

Parties, interest groups, campaigns, and elections; Congress and the Presidency. For lower division students only.

12. American Government and Politics. (5) I. The Staff

Political ideas, institutions, and processes of American government. The role of Congress and the President in policy formation and of the Supreme Court in interpreting the Constitution. Recommended for majors. Not open to students who have received credit for Political Science 5, 10, or 100.

15. American Government: Contemporary Issues of Public Policy. (4) III. The Staff

Prerequisite: An introductory course in American government or consent of instructor.

An analysis of selected major political conflicts and governmental programs in the United States.

19. Political Science Conference. (3) I, II, III. The Staff

Seminar on selected central themes in political science. Themes will vary according to instructor. Open only to lower division majors; Political Science 19, however, does not count toward completion of major requirements. This course may be repeated for credit with consent of the instructor.

25. Theory and Practice in Politics. (4) II. Mr. Iyer

An introduction to the basic problems of political life, as construed in theory and confronted in practice, with emphasis on the objectives of securing public order, social harmony and the common good. Examples will be chosen from ancient city-states, the modern nation-state and contemporary attempts to secure world order. Different versions of the dialectic will be explained.

40A. Modern East Asia: China. (4) I, II. Mr. Liu

A survey of contemporary Chinese politics, including leadership, ideology, organization, social and economic reforms and general foreign relations.

40B. Modern East Asia: Japan. (4) II. Mr. Fukui

An introductory general survey of postwar Japanese government and politics with emphasis on domestic political forces and their alignment. Designed to prepare students for the more specialized Political Science 135.

40C. Modern East Asia: Southeast Asia (4) III. Mr. Fukui

An introductory survey of politics and interna-

tional relations in postwar Southeast Asia focused on relationships between domestic political developments and intra-regional and international relations.

45. Contemporary Political Ideologies and Systems (4) I, III. Mr. Ebenstein, Mr. Merkl

The main political forces, institutions, and ideologies in the world today.

90A. Introductory Lab/Seminar in Current Policy Problems. (2) I, II, III. Mr. Noël, POLIS Staff

An introduction, through participation in simulation and/or gaming exercises, to selected current problems in public policy, including urban, environmental and foreign policy problems. (90A may be taken independently of 90B.)

90B. Introductory Lab/Seminar in Policy Processes. (2) I, II, III. Mr. Noël, POLIS Staff

An introduction, through participation in simulation and/or gaming exercises, to the relationship between policy-making processes and policy content, focusing on decision processes in the executive, legislative, and judicial branches of government at all levels. (90B may be taken independently of 90A.)

Upper Division Courses

100. American National Government. (4) I, II, III. The Staff

Institutions of our national government and the political ideas on which these institutions have been established; the role of Congress, the President, the courts, administrative agencies, and regulatory legislation. Not open to students who have received credit for Political Science 5 or 10, or 12.

101. Political Inquiry. (4) I. Mr. Noël

Theories, techniques and problems of quantitative and other approaches to the data of politics; research design and application; the role of values.

104. Comparative Metropolitan Politics. (4) III. Mr. Snow

An analysis of institutional developments and political processes in selected industrial nations.

105. Comparative Political Analysis. (4) III. Mr. Liu, Mr. Fukui

The concepts, theoretical perspectives, and political phenomena central to comparative analysis and area studies. A core course generally recommended and in some instances required for advanced work in comparative government.

106. Gaming in Social Analysis (4) I. Mr. Noël

Prerequisite: Consent of the instructor. Applications of simulation and gaming methodologies in the analysis of social and political processes.

107. Computer Applications in Political Science. (4) I. Mr. Noël

Prerequisite: Competence in at least one higher-order programming language, e.g., FORTRAN IV, BASIC, PL-1, etc.

A survey of computer applications in the acquisi-

tion, management and analysis of political data and simulation and modeling of political phenomena.

108. Politics and Literature. (4) III. Mr. Nash

This course will explore the political content of contemporary literature. Emphasis will be placed on concepts such as alienation, organization, power, freedom, etc., and the ways in which they have been dealt with by modern authors.

110. Political Concepts. (4) III. Mr. Iyer

Introduction to some of the main concepts of political theory, such as the individual and the state, freedom and equality, political obligation, and their relevance to modern society and government.

111. Anarchist Thought. (4) I. Mr. Iyer

An examination of the diverse and enduring strains of anarchist thought concerning the reconstruction of society, politics, and the individual personality. Theories and programs from Godwin to Gandhi, the late 18th century to the present, will be considered with an emphasis on the relation between theory and practice. (This course is designed for majors; non-majors must secure permission of instructor.)

113. American Political Thought. (4) I, II.

Mr. Baker

The origin and development of significant political ideas in the United States, as expressed in the contributions of selected thinkers.

115. Law in the Modern State. (4) I.

Mr. Pritchett, Mr. Schrock

Legal institutions in democratic societies, with particular reference to the United States. The role of lawyers, judges, and courts. The unique functions of the Supreme Court in the American political system. Judicial reasoning as reflected in selected decisions.

117. Jurisprudence. (4) III.

Mr. Anderson, Mr. Schrock

Prerequisite: Political Science 115 or consent of instructor.

An inquiry into the nature of law and justice.

May be applied to fields of Public Law or Political Theory; not to both.

118. Electoral Politics. (4) I. Mr. Davidson

An examination of theoretical and practical issues involved in participation in the U.S. electoral system. A series of interdisciplinary lectures and core readings, supplemented by consideration in discussion sections of various facets of the forthcoming elections. This is the same course as Sociology 118.

121. International Politics. (4) II, III.

Mr. Gordon, Mr. Hanrieder

An examination of theories concerning the actions, interactions and relationships among nation-states.

122. Selected Problems in International

Politics. (4) III.

Mr. Gordon

Prerequisite: Political Science 121, or consent of instructor.

Theoretical analysis of some significant problems in the relations among nation-states during the twentieth century. Likely topics: Origins of World War I; Munich Crisis; Origins of the Cold War; Evolution of East-West Relations; Vietnam War.

124. International Organization. (4) III.

Mr. Goodspeed

The nature and function of international organization, stressing an evaluation of the experience of the League of Nations and the United Nations; regional organizations and specialized agencies.

125. International Law. (4) I. Mr. Anderson

Prerequisite: Political Science 115 or consent of instructor.

Nature and sources of international law; international legal personality; nationality; territory; jurisdiction; diplomatic and consular agents; treaties; war; neutrality.

126. International Relations of East Asia.

(4) I.

Mr. Fukui

The foreign relations of China, Japan, and Korea as interpreted in terms of contemporary international relations theory and concepts.

127. American Foreign Policy. (4) I, III

Mr. Hanrieder, Mr. Noël, Mr. Wesson

The United States in world politics. Policy making institutions, particularly the Presidency, Congress, State Department, and the military establishment. Interaction between domestic and external politics.

128. Soviet Foreign Policy. (4) II.

Mr. Wesson

The foreign policies of the Soviet Union considered in relation to such concepts as continuity and change, Messianism and real-politik, tactics and strategy, coexistence expansion.

129. Foreign Policies of Western European

Powers. (4) III.

Mr. Gordon

Contemporary policies of Britain, France, Germany, Italy and the Common Market.

130. Comparative Communist Systems.

(4) III.

The Staff

A comparative examination and analysis of the Communist systems of Eastern Europe, Soviet Russia and China, with particular reference to sources of growing diversity in institutions, concepts of man and society, economic policy and the role of the party.

131. China in World Affairs. (4) III. Mr. Liu

The ideological and cultural attitudes of mainland China, with emphasis on general policies both within the Communist world and other areas (South Asia, Africa, and America).

132. Latin America in World Affairs. (4) II.

Mr. Ornelas

Relations of Latin America with the United States and other world powers; Pan-Americanism and its relation to world organization.

133. Comparative Urban Politics (4) I.

Mr. Ornelas

Selected problems of the impact of urban growth and development on the urban political process, with particular attention to the developing nations. In a comparative framework an examination of differences in the politics of ethnic groups in urban America.

134. Nationalism and Communism in East

Asia. (4) II. Mr. Fukui

Actions and interactions of the forces of nationalism and communism in East Asian politics, with emphasis on the role of organized groups representing these forces.

135. Government and Politics of Japan.

(4) III. Mr. Fukui

The organization and operation of Japanese politics, with particular attention to domestic political forces and problems.

136. Government and Politics of China.

(4) II. Mr. Liu

The ideology, structure, and functions of the Chinese political system, with emphasis on the nation-building process under the Communist regime.

140. Politics of France and Italy. (4) II.

Mr. Merk

The political culture, history, political parties and governmental organization of France and Italy.

141. Politics of Germany. (4) III. Mr. Merk

The political culture, history, political and social forces, and governmental organization of Western Germany and Eastern Germany.

142. British Politics. (4) I. Mr. Gordon

The political culture, history, institutions, and behavior of Great Britain.

143. Government and Politics in the Soviet

Union. (4) I. Mr. Wesson

Ideological foundations. Structure and methods of the Communist Party. The apparatus of government and its development.

144. Governments of Central and Eastern

Europe. (4) II. The Staff

The political cultures, ruling parties, ideological foundations and practices, and socio-economic problems. Foreign policies, including analyses of cohesive and divisive forces within the Communist bloc.

145. The Politics of Scandinavia. (4) III.

Mr. Anderson

The political culture, institutions, processes, and relations of the Scandinavian states—Sweden, Norway, and Denmark. Special emphasis on general problems of post-industrial society.

146. The Political Systems of Tropical

Africa. (4) II. The Staff

A comparative analysis of the political systems of a selected number of new states in tropical Africa, with particular emphasis placed upon the social, economic, and cultural setting of politics in these states.

147. The Politics of Developing Areas.

(4) II, III. Mr. Liu, Mr. Fukui

A comparative analysis of the political systems of a selected number of African, Asian and Middle Eastern countries, with particular attention to the general problems of political development and modernization common to all of them.

148A-B. Governments of Latin America.

(4-4) I, II. The Staff

148A: A comparative study of governmental and political development, organization and practices in the states of Middle America.

148B: A comparative study of governmental and political development, organization and practices in the states of South America.

149. Comparative Party Systems. (4) II.

Mr. Nash

Analysis of the roles performed by political parties in a selected number of industrialized and developing nations. Relationships between party systems and such factors as economic development and social stability.

150. Politics of the Middle East.

(4) I. The Staff

The development of governmental institutions and political forces in the post-colonial era. Emphasis will be placed on relationships between internal cultural dynamics and international politics, and examples will include the Arab-Israeli conflict.

152. American Political Parties. (4) II.

Mr. Davidson, Mr. Turner

The nature, characteristics, and history of American political parties; party organization; political campaigns and finance; nominations, elections, and electoral problems.

152L. American Political Parties Lab. (1) II.

Mr. Davidson, Mr. Turner

Laboratory exercises in the study of political parties with emphasis on party organization, nominations, elections and electoral problems. (When offered it must be taken concurrently with 152.)

153. Political Interest Groups. (4) II.

Mr. Turner

The nature and function of organized interest groups and their impact upon public opinion and government.

154. Public Opinion. (4) II. Mr. Hetrick

A study of the nature and the means of formation of public opinion. Public opinion as a factor in popular government and as a control device in the modern state.

155. American Legislatures. (4) I.

Mr. Davidson, Mr. Mann

The organization, operation, and politics of Congress and the state legislatures; problems of representation, leadership, and relations with interest groups.

155L. American Legislatures Lab. (1) I.

Mr. Davidson, Mr. Mann

Political Science Laboratory in the organization, operation and politics of Congress and the state legislatures; problems of representation, leadership, and relations with interest groups. (When offered it must be taken concurrently with 155.)

156. Analysis of Political Behavior. (4) III.

Mr. Hetrick, Mr. Wyner

Theories, methodologies and findings of the behavioral approach to the study of the political sys-

tem and men in that system. Chief reference is to the American system.

157. The American Presidency. (4) III.

Mr. Davidson, Mr. Mann

Analysis of the institution of the Presidency, its functions, formal and informal relationships, and its limitations within the American political system. Emphasis on the dynamics of the Presidency, including presidential personality, conception of role, impact of public opinion, and responses to changes in the environment.

165. Administration of Justice. (4) II, III.

Mr. Anderson, Mr. Schrock, Mr. Lodge

An examination of local courts in particular, with emphasis on procedural problems and suggested reforms. The American adversary system is stressed within the context of comparative judicial administration.

166. American Constitutional Law:

Distribution of Power. (4) II.

Mr. Nash, Mr. Pritchett

Prerequisite: Political Science 115 or consent of instructor.

The role of the Supreme Court as arbiter of federalism and separation of powers; interplay of political, social, and economic forces.

167. Constitutional Law: Civil Liberties.

(4) III. Mr. Nash, Mr. Pritchett

Prerequisite: Political Science 115 or consent of instructor.

The role of the Supreme Court as interpreter of constitutional freedom of expression and conscience; procedural guarantees and equal protection of the laws.

172. State and Local Government. (4) I.

Mr. Baker, Mr. Snow, Mr. Wyner

Basic problems and recent developments, with emphasis on state political forces, institutions, and processes. Intergovernmental relations.

172L. State and Local Government Lab.

(1) I. Mr. Baker, Mr. Snow, Mr. Wyner

Political Science Laboratory in basic problems and recent developments, with emphasis on state political forces, institutions, and processes. Intergovernmental relations. (When offered it must be taken concurrently with 172.)

173. Metropolitan Government and Politics.

(4) III. Mr. Snow

Problems of politics and administration in urban and metropolitan areas.

Students planning to complete both Political Science 172 and 173 are encouraged to begin with Political Science 172.

173L. Metropolitan Government and Politics

Lab. (1) III. Mr. Snow

Laboratory exercises in metropolitan government and politics with emphasis on local interest groups, local decision-making, and intergovernmental relations. (When offered it must be taken concurrently with 173.)

174. Chicano Politics. (4) I. Mr. Ornelas

Political life in the barrio, political behavior of the Chicano community and representation of Chicanos by elected officials and interest groups.

175. Politics of the Environment. (4) III.

Mr. Mann

Analysis of environmental policy issues and their treatment in the political process. Discussion of the interplay of substantive issues, ideology, institutions, and private groups in the development, management, protection and preservation of natural resources and the natural environment.

176. Black Politics in America. (4) II.

The Staff

A general survey of political phenomena in the Black community. American political institutions, law, legislation and administration will be examined in theory and practice to determine their function in relation to Black politics.

177. Politics and Population.

(4) III.

Mr. Nash

Population as a political problem in industrialized and in non-industrialized countries; relationships to social, economic, and environmental strains. Hidden versus deliberate population policies. Population control, cultural-economic imperialism, and political equity. Freedom, technology, population, and the political reordering of values.

179. Sex Roles in Politics. (4) III. The Staff

An overview and analysis of the major ideas and issues posed by the emerging cleavage along sex lines, especially the political and economic aspects of women's position and influence in society. Major feminist writings and proposals for social change are included.

180. Public Administration and Public

Policy. (4) I.

Mr. Moore

The nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process.

180L. Public Administration and Public

Policy Lab. (1) I.

Mr. Moore

Political Science Laboratory in the nature of American bureaucracy, behavior patterns of public officials, and the role of administration in the political process. (When offered it must be taken concurrently with 180.)

181. Public Administration: Organization and Process. (4) II.

Mr. Moore, Mr. Wyner

Concepts and issues of public administration, including theories of organization, decision making, administrative behavior, and budgetary processes. Students planning to complete both Political Science 180 and 181 are encouraged to begin with Political Science 181.

182. Political Decision Processes. (4) III.

Mr. Noël

An examination of empirical and normative decision theory, including a) a review of theories of individual and collective choice as they relate to political life, and b) an introduction to models and

analytic techniques for optimal decision, with special reference to governmental applications.

This course will not be taught in 1973-74.

184. Comparative Administration. (4) III.

The Staff

A comparative analysis of the public bureaucracies of a selected number of developed and developing countries, with particular attention being given to the cultural determinants of administrative norms and behavior.

185. Government and the Economy. (4) I.

Mr. Moore

Government's evolving role in economic life; the cultural, political, and philosophical setting of government-business relations; the maintenance and moderation of competition; the goals, methods, and politics of regulatory administration.

187. Political Theory: Ancient and Medieval.

(4) I.

Mr. Schrock

The development of political theory from Plato and Aristotle to the sixteenth century.

188. Modern Political Theory. (4) II.

Mr. Schrock

Development of political ideas from the sixteenth century to the nineteenth century.

189. Recent and Contemporary Political

Theory. (4) II.

Mr. Ebenstein

Development of political ideas in the nineteenth and twentieth centuries.

190A. Laboratory/Seminar in Urban Policy Problems. (2) I, II, III.

Mr. Noël, POLIS Staff

An examination, through computer-based gaming and simulation, of selected problems in urban policy, with special emphasis on the relationships among social, political and economic policy alternatives and the dynamics of growth and decay. (190A may be taken independently of other 190 labs.)

190B. Laboratory/Seminar in Foreign Policy Problems. (2) I, II, III.

Mr. Noël, POLIS Staff

An examination, through participation in diplomatic gaming exercises, of selected problems in American foreign policy, such as: the conflicts in the Middle East and Southeast Asia, great-power relations, arms control and disarmament, developing areas, etc. (190B may be taken independently of other 190 labs.)

190C. Laboratory/Seminar in Environmental Policy Problems. (2) I, II, III.

Mr. Noël, POLIS Staff

An examination, through computer-based gaming and simulation, of selected problems in environmental policy and politics. Offerings of 190C will alternate between an urban air-pollution focus (the "METRO-APEX" simulation) and a water-pollution focus (the "River Basin Model"). Accordingly, 190C may be repeated for credit. (190C may be taken independently of other 190 labs.)

190I. International Politics in Motion.

(2) II.

The Staff

This course will emphasize the film as the central focal point for instruction in international relations and may be taken concurrently with Political Science 121. Selected themes to be introduced include Cold War origin, revolution, intervention, alliance systems, and foreign policy decision making. Students will be expected to evaluate each film and the results will be incorporated into the film critiques of students enrolled in Political Science 194.

190L. Latin American Workshops. (2) II.

The Staff

Prerequisite: Must be enrolled in Political Science 148B.

Laboratory, using multi-media approach, oriented to analyze political issues of the ten South American countries.

190M. Laboratory/Seminar in Executive Decision Processes. (2) I, II, III.

Mr. Noël, POLIS Staff

An examination, through participation in simulation and gaming exercises, of selected aspects of executive processes, including presidential advisory and information functions, coordination and central clearance, and Presidential-Departmental relations. (190M may be taken independently of other 190 labs.)

190N. Laboratory/Seminar in Electoral Decision Processes. (2) I, II, III.

Mr. Noël, POLIS Staff

An examination, through computer-based simulation and gaming, of alternative explanatory models for voter choice, including attitudinal, sociological, and utility models. (190N may be taken independently of other 190 labs.)

190S. Laboratory/Seminar in Social and Political Theory. (2) I, II, III.

Mr. Noël, POLIS Staff

An examination, through participation in a simulated society exercise ("SIMSOC") of selected problems in general social and political theory, including the problem of social order, legitimacy, and collective versus individual decision. (190S may be taken independently of other 190 labs.)

192. Field Research in Political Science.

(4-12) I, II, III, IV.

Mr. Davidson, Mr. Wyner

Prerequisites: UD status, 3.00 overall GPA, approval by Department.

Directed research on the political process through participant observation and relevant reading. Individually assigned, instructed, and supervised field work. Students will examine first hand behavior in leading political roles in American politics.

No more than a combined total of 8 units of courses numbered 190 and above (nor of four units each in Political Science 193, 194 or 199) may apply toward the major requirements.

193. Internship in Government. (4) I, II, III.
Mr. Wyner

Prerequisite: Permission of the instructor.

Special seminar for selected students in contemporary urban problems. Offered in conjunction with practical experience in local governmental office. May be repeated for additional 4 units; only 4 units will apply to the major.

194. Group Studies. (1-4) I. The Staff

Subject to Departmental approval, students may repeat this course. Themes will vary according to instructor. Only 4 units may apply to the major.

195. Honor Seminar. (4) III. The Staff

Prerequisite: Open only to upper division students who have been accepted into the Department's Honors Program.

An intensive analysis of the approaches, problems, and methodologies of a particular sub-field of political Science.

196. Senior Seminar in Political Science.
(4) I, II, III. The Staff

197A-B-C. Senior Thesis in Political Science.
(4-4-4) I, II, III. The Staff

Prerequisites: Senior standing; 3.0 grade-point average; and approval of Department.

Selected seniors may pursue individual, significant research projects with close tutorial supervision of faculty advisers. May be repeated for up to 12 units, but only 4 units may apply to major requirements.

199. Independent Studies in Political Science. (1-5) I, II, III. The Staff

Admission by special permission only. For majors. No more than 4 units of 199 may count toward completion of the major requirements.

Graduate Courses

203. The Nature of Political Inquiry.
(4) I, III. The Staff

204. The Design and Analysis of Political Research. (4) II.
Mr. Hetrick, Mr. Noël, Mr. Snow

205. Data Collecting Techniques in Political Research. (4) III. Mr. Hetrick

215. The American Governmental Process.
(4) I, III. Mr. Davidson, Mr. Mann

220. Constitutional Interpretation. (4) II.
Mr. Schrock

225. International Relations. (4) I, III.
Mr. Gordon, Mr. Hanrieder

230. Comparative Political Systems. (4) I.
Mr. Merkl

240. Experimental Studies in Political Science. (4) II. Mr. Noël

241. Seminar in Conflict Studies. (4) II.
Mr. Noël

251. Seminar in the Policy Process. (4) II.
Mr. Mann

252. Seminar in Public Opinion and Political Participation. (4) II. Mr. Hetrick

253. Seminar in Political Interest Groups.
(4) I. Mr. Turner

254. Seminar in the Legislative Process.
(4) II. Mr. Davidson, Mr. Mann

255. Seminar in State Government and Politics. (4) III. Mr. Wyner, Mr. Baker

256. Seminar in the American Presidency.
(4) II. Mr. Davidson, Mr. Mann

257. Seminar in Urban Government and Politics. (4) III. Mr. Snow

258. Seminar in Politics and Population Policy. (4) I. Mr. Nash

259. Seminar in Political Parties. (4) II.
Mr. Turner

260. Seminar in the Judicial Process. (4) I.
Mr. Pritchett

261. Seminar in Public Law. (4) I.
Mr. Schrock, Mr. Anderson

262. Seminar in American Constitutional Law. (4) III. Mr. Pritchett

263. Seminar in the Administration of Justice.
(4) III. Mr. Lodge

265A. Seminar in Political Theory: Ancient and Medieval. (4) I. Mr. Ebenstein

265B. Seminar in Political Theory: Modern. (4) II. Mr. Ebenstein

265C. Seminar in Political Theory: Contemporary. (4) III. Mr. Ebenstein

268. Seminar in American Political Thought.
(4) III. Mr. Baker

269. Seminar in Political Concepts. (4) II.
Mr. Iyer

279. Seminar in Chinese Foreign Policy.
(4) I. Mr. Liu

271. Seminar in International Politics. (4) III.
Mr. Wesson

272A-B. Seminar in International Law and Organization. (4) (4-4) I, II.
Mr. Anderson, Mr. Goodspeed

274. Seminar in Theories of International Politics. (4) II. Mr. Hanrieder

277. Seminar in American Foreign Policy.
(4) III. Mr. Hanrieder
278. Seminar in Comparative Foreign Policies. (4) III. Mr. Gordon
- 280A-B. Seminar in Soviet Studies.
(4-4) II, III. Mr. Wesson
Prerequisite for 280A: Political Science 230 or equivalent. 280B: Political Science 280A or equivalent.
281. Seminar in Comparative Communist Systems. (4) II. The Staff
- 282A-B. Seminar in Latin American Governments. (4-4) II, III. The Staff
- 283A-B. Seminar in Western European Politics. (4-4) II, III.
Mr. Merkl, Mr. Gordon
284. Seminar in Politics and Socio-Economic Change (4) II. Mr. Nash
285. Seminar in Chinese Politics. (4) II.
Mr. Liu
286. Seminar in Japanese Politics. (4) III.
Mr. Fukui
287. Seminar in South Asian Studies.
(4) II, III. The Staff
288. Seminar in African Politics. (4) II.
The Staff
289. Seminar in Political Development.
(4) III. The Staff
290. Seminar in The Study of Public Administration. (4) II. Mr. Moore
291. Seminar in Public Administration and Public Policy. (4) III. Mr. Moore
293. Seminar in Comparative Public Administration. (4) III. The Staff
296. Seminar in Models in Politics and the Social Sciences. (4) III. Mr. Iyer
- 594AA-594ZZ. Special Topics.
(1-4) I, II, III. The Staff
- 595AA-595ZZ. Group Studies. (4) I, II, III.
The Staff
- 596AA-596ZZ. Directed Reading and Research. (2-6) I, II, III. The Staff
- 597AA-597ZZ. Individual Study for Master's Comprehensive Examinations and Ph.D. Examinations. (1-12) I, II, III. The Staff
- 598AA-598ZZ. Master's Thesis Research and Preparation. (1-4) I, II, III. The Staff
- 599AA-599ZZ. Ph.D. Dissertation Preparation. (1-12) I, II, III. The Staff

PSYCHOLOGY

- *William D. Altus, Ph.D., *Professor of Psychology*.
Gerald S. Blum, Ph.D., *Professor of Psychology*.
John W. Cotton, Ph.D., *Professor of Education and Psychology*.
Walter C. Gogel, Ph.D., *Professor of Psychology*.
†Robert M. Gottsdanker, Ph.D., *Professor of Psychology*.
Howard H. Kendler, Ph.D., *Professor of Psychology*.
Tracy S. Kendler, Ph.D., *Professor of Psychology*.
Charles G. McClintock, Ph.D., *Professor of Psychology (Chairman of the Department)*.
†David Premack, Ph.D., *Professor of Psychology*.
Robert W. Reynolds, Ph.D., *Professor of Psychology*.
Alma B. MacGregor, Ph.D., *Professor of Psychology, Emeritus*.
Harry J. Carlisle, Ph.D., *Associate Professor of Psychology*.
John M. Foley, Ph.D., *Associate Professor of Psychology*.
Jerry W. Higgins, Ph.D., *Associate Professor of Psychology*.
Gerald H. Jacobs, Ph.D., *Associate Professor of Psychology*.
†Elijah P. Lovejoy, Ph.D., *Associate Professor of Psychology*.
David M. Messick, Ph.D., *Associate Professor of Psychology*.
Ben M. Clopton, Ph.D., *Assistant Professor of Psychology*.
Robert L. Klatzky, Ph.D., *Assistant Professor of Psychology*.
Robert L. Koegel, Ph.D., *Assistant Professor in Residence*.

¹ Absent on leave, fall 1973.

² Absent on leave, winter 1974.

⁴ Absent on leave, 1973-74.

Amado M. Padilla, Ph.D., *Assistant Professor of Psychology.*
 Arthur J. Sandusky, Ph.D., *Assistant Professor of Psychology.*
 A. Robert Sherman, Ph.D., *Assistant Professor of Psychology.*
 Roulette W. Smith, Ph.D., *Assistant Professor of Psychology*

THE MAJOR

The major in psychology is designed to provide the student with an appreciation of the scientific study of behavior.

The range of course offerings is broad, from psychophysiological to social psychological functioning. The entering major is encouraged to sample widely from this spectrum before specializing in any given area. The major areas within the department are: psychophysiology, perception, learning, personality, developmental, and social psychology. However, a large number of offerings either straddle or fall outside these areas, such as courses in psychopharmacology, motivation and emotion, thinking and problem solving, computer applications, language, psychopathology, psychometrics, psychotherapy, human sexuality, the autistic child, urban living, intergroup conflict, etc. In addition, the department offers some of its senior majors a two-to-three quarter field experience in psychological settings in the community. Advanced students also have the opportunity to attend seminars treating specialized topics, and to conduct independently designed research or reading projects under the supervision of a faculty member.

The Department of Psychology has four major undergraduate programs offering a Bachelor of Arts Degree in General Psychology, Experimental Psychology, Developmental Psychology, and Physiological Psychology.

A Bachelor of Arts Degree in General Psychology is recommended for students whose interests are in a liberal arts education and in understanding contemporary issues in psychology. Students anticipating graduate training in areas outside psychology, or in related disciplines, e.g., law, religion, and journalism, may wish to consider this as an appropriate program.

The Bachelor of Arts Degree in Experimental Psychology, Developmental Psychology, and Physiological Psychology is considered a Pre-Professional degree. Students who wish a strong background in the science of psychology are advised to follow the Experimental Psychology program. Those students who wish to do graduate work in psychology, including the clinical area, or in related disciplines, e.g., social work, medicine, and M.A. or Ph.D. training in education, are strongly advised to also follow the Experimental program.

The program in Developmental Psychology is designed for students who are primarily interested in developmental processes, and who intend to pursue a paraprofessional position working with children following completion of the program. Students who intend to go on to graduate work in developmental psychology are advised to complete the program in Experimental Psychology, and to sample some added developmental courses if they so desire.

The program in Physiological Psychology is designed for those students who are interested in an intensive study of the relationship between brain function and behavior. Such a study requires background preparation in mathematics, chemistry, and physics. Within the major there is a common core involving a study of neuron physiology, neurophysiology and neuroanatomy, biochemical, endocrine, and pharmacological regulations in the central nervous system, and behavioral and psychological data related to these processes. There is flexibility such that the student may elect emphasis in various areas such as sensory psychophysiology, neuropharmacology, the physiology of emotion and motivation, and genetic and developmental psychobiology. This is also an appropriate program for students intending to pursue graduate training in physiological psychology.

Requirements for the Major

For transfer students, at least 18 of the upper division units required for the major (all programs) must be acceptable upper division psychology units taken at the University of California, Santa Barbara.

General Psychology

Preparation for the Major: General Psychology (1) is required. Introduction to Experimental Psychology (3) and Analysis of Data in Psychology (5) are prerequisites to many upper division courses; students are urged to review specific course prerequisites prior to planning their course of study. Certain lower division courses in other departments are also required as prerequisites to certain upper division courses; students are urged to review specific course prerequisites prior to planning their course of study.

Requirements for the Major: Thirty-six to forty-six units of upper division psychology courses are required. If the student successfully completes either Introduction to Experimental Psychology (3) or Analysis of Data in Psychology (5), forty-one units of upper division psychology courses are required; if he completes both of the foregoing, then thirty-six units are required; and if he completes neither, then forty-six units of upper division psychology are required.

Majors must successfully complete at least one course from each of three of the five areas represented in Groups I and II. Group I consists of survey lecture courses. Group II consists of advanced lecture and intensive laboratory courses. Students electing a Group II course in a given area may not concurrently or subsequently enroll in the Group I course in the same area. (For areas and specific courses see following.)

Experimental Psychology

Preparation for the Major: General Psychology (1), Introduction to Experimental Psychology (3), and Analysis of Data in Psychology (5) are required. Certain lower division courses in other departments are required as prerequisites to certain upper division courses; students are urged to review specific course prerequisites prior to planning their course of study.

Requirements for the Major: Thirty-six units of upper division psychology courses are required. Majors must successfully complete six courses in Group II, including three laboratory courses. Group II courses are advanced lecture and intensive laboratory courses; students may not concurrently or subsequently enroll in the Group I (survey) course in the same area as an elected Group II course. (For areas and specific courses, see following.)

Developmental Psychology

Preparation for the Major: General Psychology (1), Introduction to Experimental Psychology (3), and Analysis of Data in Psychology (5) are required. Certain lower division courses in other departments are required as prerequisites to certain upper division courses; students are urged to review specific course prerequisites prior to planning their course of study.

Requirements for the Major: Forty units of upper division psychology courses are required. Majors must successfully complete a minimum of two lecture courses from the Group II series. One of these courses must be taken from one of the following areas: learning, perception, or physiology; the second must be taken from social or personality. The student will also complete Psychology 121, Psychological Measurement. Completion of the preceding courses is a prerequisite (exceptions to be approved by the Chairman) to the student's entry into Group IV courses in developmental psychology of which the student must take a minimum of three. (For listing of Group IV courses, see Department.) Finally, upon completion of the preceding course requirements (or with the permission of the Chairman), the student will complete two eight-hour practicums and seminars that involve supervised participation in various community organizations that serve children.

Physiological Psychology

Preparation for the Major: Students must take the following courses or their equivalents: General Psychology (1), Introduction to Experimental Psychology (3), Brain and Behavior (106); Biology 20, or 1A-1AL, 1B-1BL; Chemistry 1A-1AL, 1B-1BL, 1C-1CL, 6AB, 8AB; Physics 6A-6AL, 6B-6BL, 6C-6CL; and Mathematics 34ABC. Zoology 40 and 40L are recommended. Although Psychology 106 is an upper division course for Psychology and other majors, it is to be taken in lower division by Physiological Psychology majors.

Requirements for the Major: Majors must successfully complete Psychology 113A-B-L,

110B–L, 111A–L, 132, and 133A–B. Students who otherwise qualify, and who plan to pursue graduate work are encouraged to take Independent Studies (199) in their senior year.

GROUP I AND GROUP II OFFERINGS BY AREA

Area	Group I	Group II
Physiological	Brain & Behavior (106)	Physiological Psychology (113A) Physiological Psychology (113B) Laboratory in Physiological Psychology (113L)
Perception	Perception in Life and Thought (107)	Perception (110A) Perception (110B) Laboratory in Perception (110L)
Learning	Learning & Memory (108)	Learning (111A) Learning (111B) Laboratory in Learning (111L)
Personality	Abnormal Personality (103)	Personality Dynamics (114) Laboratory in Personality (114L)
Social	Social Aspects of Behavior (102)	Social Behavior (112) Laboratory in Social Behavior (112L)

Group III courses are designed for the advanced student with specialized interests and are open to majors in all the Bachelor of Arts degree programs. Students are urged to note course prerequisites, which vary from course to course. *Although students may enroll for as many units as they wish*, with respect to fulfilling unit *requirements for the major* the following limits apply:

Course	Unit Limits
Special Topics in Psychology (160AA–ZZ)	8 units from two courses <i>with different letter designations</i>
Seminars in Psychology (190AA–ZZ)	6 units from three courses <i>with different letter designations</i>
Undergraduate Seminar (198)	6 units

PREPARATION FOR GRADUATE STUDY

Adequate preparation for graduate study in psychology (including clinical psychology) at the doctoral (Ph.D.) level ordinarily requires a broad background in psychology and extensive laboratory experience. The prospective doctoral student is therefore advised to enter the Experimental Psychology or Physiological Psychology programs and, further, to enroll in at least one course in each of the five areas of psychology represented in Groups I and II.

Since master's (M.A.) programs are typically more circumscribed than doctoral programs, the prospective master's student is advised to consider the specific requirements of those programs of interest in planning the major.

Selection of courses to fulfill the General Education requirement in the natural and social sciences should be made in consultation with department advisers to ensure adequate preparation in specific areas such as mathematical psychology, physiological psychology, perception, learning, developmental psychology, clinical psychology, personality, psycholinguistics, or social psychology.

THE GRADUATE PROGRAM IN PSYCHOLOGY

The department offers work leading to the Ph.D. and M.A. degrees in psychology. Candidates for admission must present a bachelor's degree with a major in psychology or the equivalent. Entering students will be appraised by means of examination and evaluation of records; where necessary, supplementary courses will be required.

DOCTOR OF PHILOSOPHY

1. Satisfactory completion of a set of comprehensive graduate qualifying examinations covering the major fields of psychology.

2. Completion and oral defense of a doctoral dissertation.

3. Satisfactory completion of a teaching assignment.

No student will be admitted to work for the Master of Arts degree only; obtaining the Master of Arts degree en route to the Ph.D. degree in psychology is permitted but not required.

TEACHING CREDENTIALS

Either a major or a minor in psychology may serve as an appropriate part of the program of studies required for an elementary, or secondary teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the Department of Psychology and in the Graduate School of Education. To meet the requirements established by the State Department of Education for a standard teaching credential, 36 quarter units of upper division course work in the major are required.

PSYCHOLOGY

Lower Division Courses

1. General Psychology. (4) I, II, III.

The Staff

An introduction to the subject matter and methods of psychology including the physiological basis of behavior, learning and memory, perception and cognition, social behavior and personality.

3. Introduction to Experimental Psychology.

(5) I, II, III.

The Staff

(Priority given to majors in Psychology.)

Prerequisite: Psychology 1.

Introduction to the planning and execution of experiments in psychology and to the analysis and interpretation of data.

5. Analysis of Data in Psychology. (5) I, II, III.

The Staff

(Priority given to majors in Psychology.)

Prerequisites: Psychology 1 and 3.

Measures of central tendency and dispersion, correlation, the significance of differences. The interpretation of typical data in psychological research.

Upper Division Courses*

Group 1. Courses in this category are survey lecture courses, have no prerequisites, and apply to credit for the major as specified. Prospective majors may take these courses as lower division students.

101. Principles of Psychology. (4) The Staff

Open to upper division students who do not have credit for Psychology 1. May be offered in substitution for Psychology 1 as a general education course and as the prerequisite for certain upper division courses. May not be taken after Psychology 1.

A critical discussion of the major problems and points of view in psychology. Topics include motivation, perception, personality, and learning.

* See Psychology Department for yearly schedule of upper division courses.

102. Social Aspects of Behavior. (4) The Staff

(May not be taken concurrently with or after Psychology 112 or 112L.)

An introduction to social psychology including attitudes and group dynamics; role conflict, interpersonal influence, reference groups, communication and opinion change, motivated perception, and perception of persons.

103. The Abnormal Personality. (4) The Staff

Analysis of disorders with psychogenic components, including neuroses, anxiety states, character disorders, psychosomatic illness, and psychoses.

104. The Exceptional Child. (4) The Staff

(May not be taken concurrently with or after Psychology 123.)

The study of children with educational, physical, and emotional handicaps.

106. Brain and Behavior. (4) The Staff

(May not be taken concurrently with or after Psychology 113A, 113B, or 113L.)

An examination of contemporary research and theory dealing with the relation between the brain and psychological variables.

107. Perception in Life and Thought. (4)

The Staff

(May not be taken concurrently with or after Psychology 110A, 110B, or 110L.)

Application of the principles of perception to the understanding of art, science, and contemporary life and their reciprocal influence on our understanding of perception.

108. Learning and Memory. (4) The Staff

(May not be taken concurrently with or after Psychology 111A, 111B, or 111L.)

The methods by which humans process, store, and retrieve information.

Group II. This category includes intensive laboratory or lecture courses. Open to junior and senior psychology majors, others by permission of instructor.

110A. Perception. (4) I.

The Staff

Prerequisites: Psychology 1, 3, and 5 or permission of the instructor.

The role of organizational processes, cue systems, and learning in the perception of object characteristics such as color, form, size, orientation, and distance.

110B. Perception. (4) II.

The Staff

Prerequisite: Psychology 5.

The examination of sensory processes and the application of psychophysical methodology to study of the response to sensory information.

110L. Laboratory in Perception. (5) III.

The Staff

Prerequisites: Psychology 1, 3, and 5 and either 107 or 110A or 110B.

A laboratory course emphasizing the formulation and testing of experimental hypotheses in perception as related to problems selected by the student to be of special interest to him.

111A. Learning. (4)

The Staff

Prerequisites: Psychology 1, 3, and 5.

Principles of instrumental and classical conditioning, avoidance learning, stimulus generalization and discrimination, learning in man and other animals.

111B. Learning. (4).

Prerequisites: Psychology 1, 3, 5 and 111A.

This course will elaborate on topics discussed in course 111A, and will also cover concept learning, human memory, and problem solving.

111L. Laboratory in Learning. (5) The Staff

Prerequisites: Psychology 1, 3 and 5, and either 111A or 111B.

Students will perform a variety of experiments to illustrate and test the theoretical notions introduced in courses 111A and 111B. Lecture and laboratory.

112. Social Behavior. (4)

The Staff

Prerequisites: Psychology 1, 3, and 5.

A review of the major problem areas in experimental social psychology including attitudes, social conformity and influence, and social interaction.

112L. Laboratory in Social Behavior. (5)

The Staff

Prerequisites: Psychology 1, 3, 5, and 112.

Methods, techniques, and typical experimental research in social psychology. Lecture and laboratory.

113A. Physiological Psychology. (4) I.

The Staff

Prerequisites: Biology 20 and Chemistry 25 or their equivalents; Psychology 1. Psychology 106 is recommended.

The physiological mechanisms of behavior.

113B. Physiological Psychology. (4) II.

The Staff

Prerequisite: Psychology 113A or permission of the instructor.

The physiological mechanisms of behavior.

113L. Laboratory in Physiological**Psychology. (5) III.**

The Staff

Prerequisites: Psychology 113A and 113B.

A study of the techniques and experimentation in physiological psychology. Lecture and laboratory.

114. Personality Dynamics. (4)

The Staff

Prerequisites: Psychology 1, 3, and 5 or permission of the instructor.

Discussion of the role of unconscious mental forces in shaping personality. Case history materials and illustrative research included.

114L. Laboratory in Personality. (5) The Staff

Prerequisites: Psychology 1, 3, 5, and 114.

Topics of current interest in personality with concurrent experimentation, analysis of data, and preparation of laboratory reports.

Group III. Courses in this category are designed for the advanced student with specialized interests in substantive and theoretical areas of psychology.

115. Conceptions of Intelligence. (4) The Staff

Prerequisite: Psychology 5 or its equivalent.

Historical consideration of intelligence and its measurement.

120. Formal Models in Psychology. (4)

The Staff

Prerequisites: Math 10 or its equivalent; Psychology 1, 3, and 5.

An analysis of selected mathematical and computer models of psychological processes with consideration given to the value and weaknesses of such theories in understanding behavior.

121. Psychological Measurement. (4)

The Staff

Prerequisites: Psychology 1 and either 103 or 114.

Consideration both of the theoretical foundations of psychological measurement; including problems of reliability, validity, norms, and prediction, and of the techniques by which aptitude, achievement, and personality tests are constructed and evaluated.

122. Motivation and Emotion. (4) The Staff

Prerequisites: Psychology 1 and either 108 or 111A.

A study of the basic principles of motivation worked out on the basis of infra-human subjects with references to tests on human subjects whenever possible. Do principles of animal motivation apply to man? Are additional principles required for man? These are two of the basic questions addressed. A competence in principles of learning is assumed.

123. Developmental Psychology. (4) The Staff

Prerequisites: Biology 20; Psychology 1, 3, 5, and 111A.

Analysis of the influence of developmental processes on behavior.

124. Comparative Psychology. (4) The Staff

Prerequisites: Psychology 1, 3, and 5.

Analysis of behavior of different species.

126. History and Systems of Psychology. (4)

The Staff

Prerequisites: Psychology 1, 3, and 5 or permission of the instructor.

Major stages in the emergence of various systems in psychology. Nineteenth century structuralism, functionalism, behaviorism, Gestalt psychology and psychoanalysis.

127. Psychology of Language. (4) The Staff

Prerequisites: Psychology 1 and 3 or permission of the instructor.

The psychological nature of linguistic theory; linguistic structure as a factor in learning, perception, and comprehension; language acquisition; multilingualism; models of language.

128. Human Thinking and Problem Solving. (4) The Staff

An examination of theories and supporting evidence regarding the nature of human thought processes.

129. Behavioral Approaches to Psychotherapy. (4) The Staff

Prerequisites: Psychology 1 and either 103 or 114.

An introduction to the basic principles and methods of behavior modification, including desensitization, operant conditioning, social modeling, expressive training, and aversion therapy. Related discussion concerning the identification of maladaptive behavior, the specification of treatment operations, and the criteria for assessing therapeutic change.

130. Psychology of Urban Living. (4) The Staff

Prerequisites: Psychology 1, 3, and 5 or permission of the instructor.

Exploring the stresses of urban life and some psychological and physiological consequences.

131. Psychodynamic Approaches to Psychotherapy. (4) The Staff

Prerequisites: Psychology 1 and either 103 or 114. Students who have taken Psychology 129 or 160JP with Mr. Brams may not take this course.

An introduction to the basic concepts of psychodynamically oriented psychotherapy. Particular emphasis is directed toward the traditional psychoanalytic, as well as the neo-Freudian, approaches to the treatment of maladaptive behavior patterns.

132. Sensory Psychophysiology. (4) The Staff

Prerequisites: Biology 20; Psychology 1, and 106 or 113A.

Physiological and psychophysical approaches to the study of sensory systems.

133A. Pharmacological, Endocrine and Biochemical Bases of Behavior. (4) The Staff

Prerequisites: Biology 1A or 20 and Chemistry 25 or their equivalents; Psychology 1, and either 106 or 113A or Biology 105. Students who have taken Psychology 133 may not take this course.

An examination of the effects on behavior of body chemistry, including genetic, endocrine, and pharmacological factors. Emphasis will be on physiological and biochemical mechanisms and their expression in "normal" and "abnormal" behavior, rather than a cataloging of drugs and behavioral effects.

133B. Pharmacological, Endocrine and Biochemical Bases of Behavior (4) The Staff

Prerequisite: Psychology 133A or permission of the instructor. Students who have taken Psychology 137 may not take this course.

A continuation of the examination of the effects on behavior of body chemistry, including genetic, endocrine, and pharmacological factors. Emphasis will be on physiological and biochemical mechanisms

and their expression in "normal" and "abnormal" behavior, rather than a cataloging of drugs and behavioral effects.

134. Cooperation, Competition, and Conflict. (4) The Staff

Prerequisites: Psychology 1, and either 112 or 102.

A study of the psychological and social psychological bases of intragroup and intergroup cooperation, competition, and conflict in animal and human behavior.

135A–B–C. Field Experience in Psychological Settings. (4) The Staff

Prerequisites: Psychology 1 and 103 or 114, senior majors, and permission of the instructor. Psychology 129 is recommended. The student must take 135A and 135B in sequence, while continuation in 135C is optional (and may be given Group III credit upon petition).

Supervised field experience in settings providing psychological services with opportunities for observation and participation. Students will spend approximately 6 hours per week in psychological settings, attend weekly class meetings, read related material, and prepare written reports.

136. The Psychology of Skill. (4) The Staff

Prerequisites: Psychology 1 and either 107 or 110A or 110B.

An analysis of motor coordination and information-processing skills from the points of view of underlying mechanisms, acquisition, and individual differences.

140. Infantile Autism. (4) The Staff

Prerequisites: Psychology 1 and either 108 or 111A or a course in behavior modification or permission of the instructor. Students who have taken Psychology 160, "Infantile Autism," or 160KA may not take this course.

The course will focus on the study of variables pertaining to the diagnosis and treatment of autistic children, and to the understanding of general principles of learning. In addition to reading the relevant literature in the area of autism, students will identify the symptoms of autism from observations of autistic children and design effective treatment programs.

150. Advanced Analysis of Data in Psychology. (5) The Staff

Prerequisites: Psychology 5; Math 10, 3A, 30 or 34A recommended.

Application of statistical methods to the design and analysis of psychological investigations and to the interpretation of quantitative data in psychology.

151. Computer Applications in Psychology. (4) The Staff

Prerequisite: Sophomore, Junior or Senior Standing. Students who have taken Psychology 160 "Computer Appreciation for Psychologists," or 160DC may not take this course.

An introduction to computer programming and the utilization of computers in the investigation of human behavior.

160AA–ZZ. Special Topics in Psychology. (4) I, II, III. The Staff

Note: Course may be repeated an unlimited number of times providing letter designations are different.

ent. However, only 8 units of major credit will be given.

Lectures in special areas of interest in contemporary psychology. Specific course titles to be announced by the department prior to each quarter.

190AA-ZZ. Seminars in Psychology.

(2) I, II, III.

The Staff

Prerequisites: Psychology 1, 3, 5, and permission of the instructor. Course may be repeated twice and up to 6 units major credit will be given providing letter designations are different.

Small group seminars in selected areas for advanced undergraduates. Students may suggest seminars to be organized under the direction and sponsorship of faculty members.

198. Undergraduate Seminar. (3)

Prerequisites: Psychology 1, 3, 5, and permission of the instructor. Course may be repeated for a total of 6 units.

Special studies in the behavioral sciences by visiting scholars in residence. To be offered intermittently.

199. Independent Studies. (1-5) I, II, III.

The Staff

Prerequisite: Advanced status (usually senior level, B average in previous college work).

Study or research under guidance of a member of the department. Students wishing to enroll should prepare a short plan of study for their course work. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses*

Full graduate status in psychology or permission of the instructor is prerequisite to all graduate offerings.

221A. Design and Measurement. (4) The Staff

Experimental design and statistical analysis in psychological research. Includes basic probability, sampling and distribution theory, hypothesis testing and estimation.

221B. Design and Measurement. (4) The Staff

Prerequisite: Psychology 221A or permission of the instructor.

Experimental design and statistical analysis in psychological research. Analysis of variance and related topics.

222. Social Psychology and Decision Making. (4)

The Staff

Examination of conflict and cooperation, group effects on individual performance, subjective probability, choice and human information processing.

223. Personality. (4)

The Staff

Structure, development, and dynamics of personality. Consideration of major personality theorists.

224. Learning. (4)

The Staff

Introduction to contemporary methodological and theoretical developments in the field of learning.

* See Psychology Department for yearly schedule of graduate courses.

225. Motivation. (4)

The Staff

Analysis of contemporary theories and models of motivation.

226. Developmental Psychology. (4) The Staff

Introduction to contemporary developmental psychology. Although the emphasis is on human development, infrahuman development is included.

227. Memory. (4)

The Staff

Analysis of selected topics in long-term and short-term memory.

228. Perception. (4)

The Staff

Analysis of psychophysical relations in sensory processes with stress on detection, scaling, discrimination, spatial and temporal resolution and the interaction of cue systems in perceptual behavior.

229. Physiological Psychology. (4) The Staff

Examination of neural and endocrine mechanisms underlying vertebrate motivational systems.

230. Psychophysiology of Vision. (3) The Staff

Consideration of the physiological and psychophysical data bearing on the major features of vision in vertebrates.

231. Advanced Techniques in Physiological Psychology. (3)

The Staff

Prerequisite: Psychology 229.

Advanced techniques in behavioral research utilizing physiological methods, with particular emphasis on primates.

234. Stimulus and Response Measurement. (3)

The Staff

Examination of the theory and practical problems of stimulus and response measurement in psychology.

235. Psychophysiology of Audition. (3)

The Staff

Prerequisite: Psychology 229 or permission of instructor.

Physiological and psychophysical approaches toward analysis of the hearing process.

236. Graduate Developmental Psychology Practicum. (2-6)

The Staff

Prerequisites: Completion of first year psychology core course requirements. Permission of the developmental committee and student's graduate adviser.

Involves working in a local agency helping them to resolve problems of development. This might include aid in program planning, reviewing the literature relevant to a question, designing individual rehabilitation programs, or conducting an empirical study in the field setting.

242A. Hypnosis as a Research Tool. (3)

The Staff

Combined lecture-laboratory course on uses of hypnosis as a research tool in diverse fields of psychology. Students participate in screening of hypnotic subjects under supervision and also design and execute experiments in areas of their own special interest.

242B. Hypnosis as a Research Tool. (3)

Prerequisite: Psychology 242A.

The Staff

Continued laboratory experience with students

carrying out individual projects under supervision. Also discussion of hypnotic experiments growing out of a conceptual model of the mind.

243. Behavior Modification. (3) The Staff

Survey of behavior modification procedures and the theories underlying their development. Topics include systematic desensitization and variants thereof, assertive training, drugs, operant conditioning procedures, hypnosis, extinction procedures, and aversive conditioning. Prior familiarity with learning theories required.

244. Psychopathology. (3) The Staff

Experimental approaches to the etiology, processes, and modification of deviant behavior, with emphasis upon the psychoses.

248. Seminar in Methodological Issues in Developmental Psychology. (3) The Staff

Prerequisite: Psychology 226.

An examination of the advantages, and limitations of various approaches to the study of the developing organism, including the comparative, the developmental, the cross-cultural, the ecological and the experimental-manipulative approach.

250. Decisional and Social Processes. (3) The Staff

A review of the psychological and social bases of decision making, choice behavior, and various patterns of social interaction.

261. Conceptual Problems in Psychology. (3) The Staff

Analytic techniques of philosophy of science applied to historical and contemporary systems of psychology.

262. Formal Models. (3) The Staff

This course concentrates on mathematical models for behavior. Several specific models and programs are discussed in detail, and these formal theories are compared with more informal, verbal theories.

263A-B. Computer Simulation of Psychological Processes. (3) The Staff

The prerequisite for 263B is 263A.

An up to date review of research on computer simulation of psychological processes. Some of the processes to be considered in detail are thinking, learning, understanding teaching, dialogue, and conflict resolution.

264. Computer-Assisted Instructional Systems. (3) The Staff

A methods course in computer-assisted instruction.

265. Comparative Behavior. (3) The Staff

Analysis of behavioral and physiological data and theories through comparative methods.

271. Spatial Perception. (3) The Staff

An examination of experimental, methodological,

and theoretical approaches to the study of the perception of extent and the interaction of spatial and other characteristics in the achievement of a stable visual world.

272. Decisional Sequences. (3) The Staff

The time-course description of information-processing and self-initiated activities, and the postulated underlying mechanisms.

594A-594Z. Special Topics. (2) I, II, III.

The Staff

Special seminar on research subjects of current interest. Each faculty member has his own letter designation which is the same as in the 599 series.

596A-596Z. Directed Reading and Research.

(2-8) I, II, III. The Staff

The purpose of this course is to provide supervised experience in experimental design and laboratory procedures on selected topics, including the formulation of experimental problems, discussion of relevant literature and the analysis and interpretation of experimental results. Minimum of two units per quarter. No more than half the units necessary for the Master's Degree may be taken in 596. Each faculty member has his own letter designation which is the same as in the 599 series.

597. Individual Study for Ph.D.

Examinations. (1-12) I, II, III. The Staff

Preparation for Ph.D. examinations under supervision of chairman of student's doctoral committee. Course is limited to no more than 24 units total.

598A-598Z. Master's Thesis Research and

Preparation. (2-6) I, II, III. The Staff

Research and preparation for the Master's thesis. Course is limited to no more than 12 units total. Since the student is already granted 6 units credit toward the degree, no unit credit will be given. Each faculty member has his own letter designation which is the same as in the 599 series.

599A-599Z. Ph.D. Dissertation Preparation.

(2-6) I, II, III. The Staff

Empirical and theoretical investigations of special problems in psychology in relation to dissertation preparation. Course is limited to no more than 12 units total. Each faculty member has his own graduate research course identified by the alphabet code following the course number, as follows: W. D. Altus, 599A; G. S. Blum, 599B; H. J. Carlisle, 599C; B. M. Clopton, 599I; J. W. Cotton, 599W; J. M. Foley, 599F; W. C. Gogel, 599U; R. M. Gottsdanker, 599G; J. Higgins, 599H; G. H. Jacobs, 599J; H. H. Kendler, 599K; T. S. Kendler, 599T; R. L. Klatzky, 599X; R. Koegel, 599V; E. P. Lovejoy, 599L; C. G. McClintock, 599Q; D. M. Messick, 599M; A. M. Padilla, 599O; D. Premack, 599P; R. W. Reynolds, 599R; A. J. Sandusky, 599Z; A. R. Sherman, 599Y; R. W. Smith, 599S.

RELIGIOUS STUDIES

Robert Michaelsen, Ph.D., *Professor of Religious Studies.*

Thomas F. O'Dea, Ph.D., *Professor of Religious Studies and Sociology.*

Raimundo Panikkar, Ph.D., D.Sc., Th.D., *Professor of Religious Studies.*

W. Richard Comstock, Th.D., *Professor of Religious Studies.*

Gerald J. Larson, Ph.D., *Professor of Religious Studies (Chairman of the Department).*

Walter H. Capps, Ph.D., *Associate Professor of Religious Studies (Director, Institute of Religious Studies).*

¹Birger A. Pearson, Ph.D., *Associate Professor of Religious Studies.*

Wilbur M. Fridell, Ph.D., *Assistant Professor of Religious Studies.*

David Weddle, M.A., *Acting Assistant Professor of Religious Studies.*

Charles Wendell, Ph.D., *Lecturer in Arabic and Religious Studies.*

Janet O'Dea, Ph.D., *Lecturer in Religious Studies.*



Edward Conze, Ph.D., *Visiting Professor in Religious Studies.*

Louis Dupré, Ph.D., *Visiting Professor in Religious Studies.*

Ake Hultkrantz, Ph.D., *Visiting Lecturer in Religious Studies.*

R. C. Zaehner, *Visiting Lecturer in Religious Studies.*

The courses in Religious Studies are designed to provide students with the intellectual tools and scholarly background required for a critical understanding of the forms and traditions of religion that have appeared in human culture. The religious phenomena of preliterate cultures and of both Eastern and Western civilizations are analyzed.

The department recommends that the following courses would provide useful background for the major in Religious Studies: four units from History 46, 81, 86, 89; eight units from History 4A–B–C; four units from Art 6A–F; Philosophy 20A. Study of a foreign language is also advisable for prospective majors. The student is urged to consult with his adviser in order to choose the language which will be most useful to him, especially if he is interested in pursuing advanced study.

Requirements for the Major

1. The student shall consult with his departmental adviser concerning his program.
2. One lower division course in Religious Studies.
3. Forty-eight units of upper division courses, of which a minimum of four must and a maximum of twelve may be selected from cognate courses in other departments. (Cognate courses must be selected in consultation with the majors adviser.) No more than 8 units from the 159 sequence may be applied toward the total of 48 units required for the major.
4. A minimum of eight units in each of the following three areas:
 - a) Western Religious Studies: 100AB, 103, 115, 116, 117, 119, 121, 122, 124, 125, 126, 130, 131, 132, 134, 135, 136, 139, 140A–B–C, 151A–B, 152, 174, 175, 181, 185, 187.
 - b) Asian Religious Studies: 159A–B–C–D–E–F–J–K–L, 160, 161, 162, 163, 164A–B, 165, 166, 167A–B, 168.
 - c) Religion and Culture: 104, 151A–B, 152, 156, 158, 163, 166, 167A–B, 168, 170, 171, 172, 173, 174, 175, 176, 177.

NOTE: The same course units may not be used to fulfill the requirements in two different areas.

5. Four units of Religious Studies 197 (Senior Seminar).

THE GRADUATE PROGRAMS IN RELIGIOUS STUDIES

All graduate applications must be received in the Graduate Division by April 15.

The Master of Arts Program

The Department of Religious Studies regards its M.A. degree program as a general rather than a specialized program. It is designed for those interested in primary and secondary school teaching as well as for those interested in non-specialized graduate work in Religious Studies.

¹ Absent on leave fall, 1973.

1. *Admission:* In addition to fulfilling the general requirements for admission to graduate status, the Department will require an acceptable level of performance on the Aptitude Test of the Graduate Record Examination and on the Miller Analogies Test. Applicants are urged to take these tests at their earliest convenience and to have the results forwarded to the Graduate Division.

2. *Undergraduate Preparation:* Students who do not have an undergraduate concentration in religious studies will be required to make up deficiencies by taking relevant undergraduate courses at UCSB.

3. *Foreign Language:* A reading examination in French or German must be passed before enrolling for a fourth quarter and before taking the comprehensive written examination. Information on methods for satisfying this requirement is available in the Department Office.

4. *Course Requirements:* Plan II, as described in the Bulletin of the Graduate Division, will be required of all students. This plan requires a minimum of 36 units of course work, of which at least 18 must be in graduate courses, and a comprehensive examination. Four units in Religious Studies 201, Pro-seminar in the Theoretical Approaches to the Study of Religion, are required. In connection with one or more of his graduate courses, the student must submit a substantial paper which will be placed on file for faculty review.

5. *Written Comprehensive Examination:* It will consist of two parts. Part One will test the student for an educated general understanding of the substance of belief and attitude in western and non-western religions, and acquaintance with their basic scriptures and some significant commentaries upon them, studied in the context of modern scholarly analysis, and an awareness of strategic developments in religious thought. Part Two will be devoted to classical and contemporary theoretical approaches to the study of religion—phenomenological, sociological, historical, etc. This two-part examination will be based largely on significant works in these fields, a list of which will be distributed to the student early in his career. This examination may be repeated once. Upon successful completion of this comprehensive examination and the other requirements listed above the student will be recommended for the M.A. degree.

The Doctoral Program

The Department of Religious Studies of the University of California, Santa Barbara, offers a program leading to the Ph.D. degree. This program is designated, Cross-Cultural and Interdisciplinary Studies in Religion, and is divided into three areas of concentration, outlined below. The student seeking admission is advised to read the descriptions of these areas with care in order to be certain one of them fits his particular needs and interests.

CROSS-CULTURAL AND INTERDISCIPLINARY STUDIES IN RELIGION

Area I: *Cross-Cultural Studies in Religious Traditions.* This area of the program is concerned with the comparative study of religious traditions of eastern* and western* cultures. The purpose is to train scholars in Religious Studies who are equipped to deal critically and creatively with issues relating to religious experience and ideas in more than one cultural context. The intention, in other words, is not to train specialists in one area—e.g., Indologists, Near Eastern scholars, etc.—but, rather to develop the student's capacity for comparative analysis and reflection in two religious traditions so that he is prepared to deal with issues arising out of the contemporary intermingling of cultural and religious traditions. Doctoral students pursuing work in this area will take courses and seminars which emphasize

- (1) the study of religious texts and other source materials, requiring philological competence;
- (2) the study of methodology and hermeneutics;
- (3) comparative phenomenological, philosophical and theological investigation.

Competence in the sources and history of western thought is required by way of preparation for all students in Cross-Cultural studies. Beyond this, students will

* These geographical designations are limited by the faculty resources of UCSB. "Eastern" is limited largely to certain aspects of South Asian and East Asian religion. "Western" is limited to certain aspects of Mediterranean, European and American religion.

focus on (a) the sources and history of two major religious traditions, one of which may include some aspect of the European-American tradition; and (b) the various approaches and methodologies used in the scholarly study of religion. The selection of special areas within the various traditions will be determined by the student's own interests as well as by the competence of the faculty in Religious Studies and UCSB's cognate resources. For special language requirement in this area of the program, see below under Foreign Language.

Area II: *Sociology of Religion.* This area of the program is concerned with the study of the relationship of religion to social structures and social processes. It includes the study of the relation of religion to social stability, to social change, and to the functional problems of a society. It includes also the study of the internal structure, development, and functional problems and dilemmas of religious organizations and institutions, and their relation to other social institutions. The sociology of religion, therefore, belongs to two universes of intellectual discourse and requires of its practitioners an acquaintance with both. It is a part of the field of sociology and demands a good understanding of sociological theory and a degree of methodological sophistication. It is also part of the larger study of religion which is itself a multidisciplinary affair. Doctoral students pursuing work in this area will take courses and seminars which emphasize (1) sociological methods and theory; (2) history and theory of religion; and (3) theories of religious behavior.

Competence in the sources and history of western thought is required by way of preparation for all students in Sociology of Religion. Beyond this, students will focus on (a) gaining some knowledge in depth of some one aspect of the academic study of religion; (b) pursuing advanced work in sociological methods and analysis—e.g., Sociology 200A–B, Sociological Theory; Sociology 201C, Methods—Natural Occurring Behavior; Sociology 257, Theories of Religious Behavior, etc.; and (c) other advanced work in religious studies.

Area III: *Coordinated Studies in Religion and the Humanities.* As distinct from patterns of graduate training which concentrate on religious traditions or originate from within the social sciences, this area of the program focuses upon the humanities and deals specifically with aesthetic, linguistic, and other symbolic forms. It functions to relate religion to the cultivation of intellect, imagination, and sensibility as this is articulated in historical and contemporary, classical and modern humanistic arts of expression. It includes development of language skills, interpretation of texts, apprehension of visual shapes, rhythmical patterns, and conceptual structures, awareness of mythic consciousness and logical capacity, knowledge of selected intellectual and cultural histories, and appreciation for subjects and problems that lie in the borderlands between the traditional fields. Students are expected to do advanced work in one of the traditional disciplines—literature, art history and theory, or philosophy—in addition to preparing themselves in the history and theory of religion, the history of western thought, and religious myth and language.

1. **Admission:** The Department may admit a beginning graduate student directly into the Ph.D. program in one of the above-outlined areas. In addition to fulfilling the general requirements for admission to graduate status, the Department will require an acceptable level of performance on the Aptitude Test of the Graduate Record Examination and on the Miller Analogies Test. Applicants are urged to take these tests at their earliest convenience and to have the results forwarded to the Graduate Division.

2. **Foreign Language:** Students must demonstrate a reading proficiency in French and German. Proficiency in both must be demonstrated before taking the oral qualifying examination. Students in Cross-Cultural Studies (Area I) will also have to demonstrate proficiency in at least one of the fundamental languages (ancient or modern) of the religious traditions in which their work centers. Students in Sociology of Religion (Area II) may under certain circumstances (with the permission of the adviser) substitute work in social-scientific research methods for either French or German.

3. **Course Work:** Students directly admitted into the doctoral program without the M.A. or its equivalent are required to take 36 units of advanced work (18 of which must be in graduate courses) in addition to the required course, Religious Studies 201, Proseminar in

Theoretical Approaches to the Study of Religion. Selection of other courses is to be worked out by the student in consultation with his adviser. Minimum residence requirement for the Ph.D. is discussed in the current Graduate Division Announcement. If a student is admitted to the doctoral program and has the M.A. or its equivalent, he is only required to fulfill the minimum residence requirement for the Ph.D. as outlined in the Graduate Division Announcement together with the required course, Religious Studies 201, Proseminar in Theoretical Approaches to the Study of Religion.

4. *Comprehensive Examination*: A two-part written examination. Part one will be devoted to classical and contemporary theoretical approaches to the study of religion as well as to the history of western thought.* Part Two will be devoted to examining students in the area chosen for special study (i.e., Areas I, II, or III).

5. *Oral Qualifying Examination and Admission to Candidacy*: After passing the written comprehensive examination the student will be placed under the supervision of a doctoral committee which will be selected in consultation with the student's doctoral adviser and approved by the Graduate Council. The student shall present to this committee a dissertation proposal in which both the subject of his research as well as the specific field-discipline to which that research will be correlated are clearly set forth.

The student must pass an oral examination administered by his doctoral committee. This examination will be designed to evaluate his fundamental knowledge of his area of concentration and his understanding of the relevant basic methodological principles.

Upon successful completion of these steps the student will be admitted to candidacy for the Doctor of Philosophy degree.

6. *Doctoral Dissertation*: The candidate must write a dissertation under the supervision of the doctoral committee demonstrating his ability to do significant research and scholarly analysis and to present his findings and conclusions with precision and clarity. If the committee so recommends, the candidate must defend his dissertation in an oral examination. The dissertation normally must be completed within five years after passing the qualifying examination.

RELIGIOUS STUDIES

Lower Division Courses

10. *The Religious Dimension of Man*
(4) I, II, III, IV. The Staff

Man as a religious being; initiation, myth, prophecy, mysticism; the nature and function of religion; its relevance for contemporary man.

20. *The Religious Quest in Time*.
(4) I, II, III, IV. Mr. Michaelsen,
Mr. Fridell

The changing forms of religious life in tribes, nations, and civilizations. Study of selected African, Asian, European and American religious traditions.

Upper Division Courses

- 100A. *History of Western Religious Thought*. (4) I. Mr. Capps
The formative period to the Reformation.

- 100B. *History of Western Religious Thought*. (4) II. Mr. Capps
The Reformation to the present.

103. *Contemporary Trends in Religious Thought*. (4) I, II, III.
Mr. Capps, Mr. Comstock
A survey of the growth and development of

twentieth century religious thought and its historical background. Course may be repeated up to eight units.

104. *The Art of Religion*. (4) II. Mr. Capps
Study of selected visual components of eastern and western religious traditions.

115. *Literature and Religion of the Hebrew Bible*. (4) I. Mr. Pearson
Introduction to the varieties of literature, traditions and institutions of ancient Israel through the prophetic period.

116. *Christian Beginnings*. (4) II. Mr. Pearson
Study of the varieties of early Christian traditions and literature of the first century, with special (but not exclusive) attention to the New Testament.

117. *The Prophets*. (4) II. Mrs. O'Dea
The origins, development and enduring significance of the prophetic movement in ancient Israel.

119. *Israel's Religion and the Ancient Near East*. (4) III. Mr. Pearson
Prerequisite: Religious Studies 115.
A study of the religion of ancient Israel against the background of ancient Near Eastern religions.

121. *Augustine*. (4) II. Mr. Capps
Reading and discussion of Augustine's writings with special attention to his influence upon western thought and culture.

* Reading list for comprehensive examination is available on request from the Department of Religious Studies.

122. Luther and Scholasticism. (4) II.

Mr. Capps

A comparative examination of medieval orthodoxy and early Reformation thought, with special attention to contemporary Roman Catholic-Protestant discussion.

124. Religious Implications of the**Enlightenment. (4) III.**

Mr. Capps

Study of the critical assessment of religion in the Age of Reason with specific reference to Kant's writings and to dominant nineteenth century European and American reactions.

125. Roman Catholicism: Its Structure and History. (4) I.

Mr. O'Dea

An analysis of the liturgy, beliefs and organization of the Catholic Church and a consideration of the chief historical events that have influenced their development.

126. Roman Catholicism in Modern Times. (4) II.

Mr. O'Dea

Prerequisite: Religious Studies 125.

An analysis of the structure and functioning of the Roman Catholic Church, seen in the context of its historical situation. Contemporary situations and problems will be given emphasis but relevant background from the post-Tridentine period and especially the last century and a half will be considered.

130. Judaism. (4) I.

Mrs. O'Dea

A study of basic structures and motifs (e.g., the Law, the Festivals, the Holy Land) within the history of post-Biblical Judaism.

131. Palestinian Judaism from Ezra to Akiba. (4) I.

Mr. Pearson

Prerequisite: R. S. 115 or equivalent.

Study of the various religious trends in Palestine from the time of Ezra to the second revolt, with special attention to the rise and development of apocalyptic.

132. Judaism in the Graeco-Roman World. (4) II.

Mr. Pearson

Prerequisite: R. S. 115 or equivalent.

Study of the cultural and religious interactions of Judaism with Hellenism among the Greek-speaking Jews of the Diaspora. Special attention will be given to the writings of Philo of Alexandria.

134. Hellenistic Religions. (4) I.

Mr. Pearson

A study of the various religious phenomena of the Graeco-Roman world (ruler cults, savior-deities, mystery religions, religious dimensions of philosophy, gnosticism, astrology, magic, alchemy, etc.). Emphasis is placed on study of the ancient sources.

135. Second-century Christianity (4) III.

Mr. Pearson

Prerequisite: R. S. 116 or equivalent.

Study of the various religious trends in developing Christianity as represented in the writings of the early Fathers, the later books of the New Testament, the New Testament apocrypha, and "heretical" movements.

136. Judaism in Modern Times. (4) III.

Mrs. O'Dea

Prerequisite: Background in study of Judaism, or consent of instructor.

Challenge of the Enlightenment and Emancipation movements to traditional Jewish life in Western and Eastern Europe. Religious and secular responses to these challenges (Orthodox, Conservative, Reform, Zionism, Socialism) in Europe and the United States.

138A. Religious Literature in Coptic. (4) I, II.

Mr. Pearson

An introduction to Sahidic-Coptic grammar, with special reference to the Coptic Gospel of Thomas. Prerequisite: At least one year of Greek.

138B. Religious Literature in Coptic. (4) II, III.

Mr. Pearson

Readings from the Gospel of Thomas and the Sahidic New Testament.

138C-D-E-F-G. Religious Literature in Coptic. (4) I, II, III.

Mr. Pearson

Prerequisite: Religious Studies 138A-B, or equivalent. Courses need not be taken in sequence.

C. Readings from selected Subakhmimic Coptic texts.

D. Readings from selected Sahidic texts of the Nag Hammadi Coptic Gnostic Library.

E. Readings from the *Apophthegmata Patrum*.

F. Readings from selected Akhmimic Coptic texts.

G. Readings from the Bohairic Coptic liturgies.

139. The New Testament in Greek (4) II.

Mr. Pearson

Prerequisites: Greek 104 (or 105) and 106 or permission of instructor.

Reading in the Greek New Testament, with comparative study of related materials from Greek literature of the Hellenistic-Roman period (same as Greek 139).

140A. Islamic Religion. (4) I.

Mr. Wendell

Origins of Islam in 7th century Arabia and the life of the Prophet Muhammad; text and message of the Koran, and the fundamentals of Orthodox Sunni belief and practice. This course same as Arabic 140A.

140B. Islamic Sects and Mystical Movements. (4) II.

Prerequisite: Rel. Stu. 140A or Arabic 140A.

The major sectarian (heterodox) divisions within Islam, e.g., the Kharijites, and the Shi'a and its offshoots, and the cultural and historical conditions under which they arose; the mystical movement and its embodiment in the Sufi orders. This course same as Arabic Nob.

140C. Developments in Modern Islam since the Middle Ages. (4) III.

Prerequisite: R.S. 140A or Arabic 140A.

The impact of the West and its secular culture on Islam; the rise of new sects in the 18th, 19th and 20th centuries; modern Quar'an interpretation and the efforts to accommodate Islam to 20th century conditions. This course same as Arabic 140C.

151A. Religion in American History (4) I.

Mr. Michaelsen

Principal figures, groups, trends and issues in religion in America to 1865.

151B. Religion in American History (4) II.

Mr. Michaelsen

Principal figures, groups, trends and issues in religion in America since 1865.

152. Religion in America Today (4) III.

Mr. Michaelsen

Recent trends in American religion and in inter-relationships between religion and American society.

156. Sociology of Religion. (4) I, III.

Mr. O'Dea

Religion as a social phenomenon; religious influence on the structure and dynamics of society; comparison of various approaches to the study of religion. Same as Sociology 156.

158. Patterns in Comparative Religion.

(4) II.

Mr. Panikkar

159A. Religious Literature in Sanskrit. (4) I.

Mr. Larson

An introduction to the phonology, morphology and syntax of classical Sanskrit.

159B. Religious Literature in Sanskrit.

(4) II.

Mr. Larson

Prerequisite: Religious Studies 159A.

Readings from the *Mahābhārata* and *Hitopadesa*.**159C. Religious Literature in Sanskrit.**

(4) III.

Mr. Larson

Prerequisite: Religious Studies 159A-B.

Readings from the *Mahābhārata* and *Hitopadesa*.**159D-E-F. Religious Literature in Sanskrit.**

(4-4-4) I, II, III.

Mr. Larson

Prerequisite: Religious Studies 159A-B-C, or equivalent.

Courses need not be taken in sequence.

Reading and analysis of classical Sanskrit religious texts.

D. *Bhagavad Gītā*.E. *Sāmkhyakārikā*.F. *Yogasūtra*.**159J-K-L. Religious Literature in Sanskrit.**

(4-4-4) I, II, III.

Mr. Larson

Prerequisite: Religious Studies 159A-B-C, or equivalent.

Courses need not be taken in sequence.

Reading and analysis of classical Sanskrit religious texts.

J. *Chāndogya Upanisad*.K. *Katha, Svetāsvatara and Māndūkya Upanisads*.L. Selected *Bhāṣyas* of Shankara.**160. Religious Systems of India. (4) II.**

Mr. Larson

Analysis of Vedic-Upanisadic-Epic traditions; Jainism and Indian Buddhism; six orthodox systems; Vaisnavism, Saivism and the Hindu Tantra.

161. Yoga Traditions of India. (4) II.

Mr. Larson

Religio-historical analysis of classical Sāmkhya and Yoga, Jain and Buddhist Yoga, and Tantric Yoga. Study of the role and function of meditation in Indian religion.

162. Seminar on Shankara and Nagarjuna.

(4) III.

Mr. Larson

Prerequisite: Religious Studies 160 or 161 or consent of instructor.

Historical, thematic and comparative analyses of Advaita Vedānta and Mādhyamika Buddhism.

163. Problems in Comparative Mysticism.

(4) III.

Mr. Panikkar

Historical and descriptive analysis of selected mystical traditions in South and East Asia, the Middle East, and Europe; and the study of selected key figures—e.g., Chuang Tzu, Sankara, Plotinus, St. John of the Cross, etc.

164A. The Buddhist Tradition. (4) I.

Mr. Larson

Origin and development of Buddhist tradition in India and South Asia.

164B. The Buddhist Tradition. (4) II.

Mr. Fridell

Prerequisite: Background in Indian Buddhism, or consent of instructor.

Evolution of the Buddhist tradition in China and Japan.

165. The Upanisadic Tradition of India.

(4) II.

Analysis and interpretation of the philosophical implications of selected Upanisads—primal myths, the doctrine of the Sēlf, the mahāvakyāni, etc.

166. Religion in Chinese Culture. (4) II.

Mr. Fridell

Emphasis on Confucian, Taoist and Buddhist traditions to the present day.

167A. Religion in Japanese Culture. (4) I.

Mr. Fridell

Prerequisite: Background in Asian Religions, or consent of instructor.

Pre-history to 1600. The development of Shinto, and Japanese forms of Confucianism, Taoism and Buddhism. Emphasis on medieval Buddhist sects: Pure Land, Zen, Nichiren.

167B. Religion in Japanese Culture. (4) II.

Mr. Fridell

Prerequisite: R. S. 167A, or equivalent.

1600-present day. Emphasis on religion and sacred values of the last century, especially prewar "familyism" and State Shinto, the "new religions" and the overall postwar scene.

168. Man in Nature: E. Asian Views.

(4) III.

Mr. Fridell

Elements of a philosophy of man in his total environment, with attention to Chuang Tzu, Chinese painting, Shinto, Japanese folklore, Buddhist Mahayana philosophy and Zen.

170. Religion and the Humanities. (4) II.

Mr. Comstock

An examination of the relationship between religion and the humanistic disciplines with special emphasis on views of the nature of man.

171. Religion and Literature. (4) III.

Mr. Comstock

An examination of religious themes as they are expressed in significant works of world literature. The nature of man, the problem of suffering, the quest for meaning, are among the topics considered through writings of Dostoevsky, Camus and others.

172. Religion and Science. (4) II.

Mr. Comstock

The impact of Western science on religion; the implication for religion of contemporary discussions of meaning, truth, and verification.

173. Religion Myth and Language. (4) I.

Mr. Comstock, Mr. Panikkar

A survey of contemporary studies into the nature and function of religious symbol and language.

174. Religious Thought and Existentialism.

(4) III.

Mr. Comstock

An examination of the Nineteenth and Twentieth Century literary and philosophical movement of existentialism and its implications for philosophy of religion and theology. Typical figures like Kierkegaard, Sartre, Camus, Buber are examined.

175. Pragmatism, Empiricism and Religion.

(4) I.

Mr. Comstock

A survey of important religious positions that have been based on an experiential and pragmatic orientation. Representative thinkers like W. James, J. Royce, G. Santayana, J. Dewey and A. N. Whitehead are examined.

176. Religion and Modern Ideologies. (4) II.

Mr. Michaelsen

The conflicts and accommodations between the historic religious systems—Hinduism, Buddhism, Judaism, Christianity, and Islam—and modern nationalism, communism, and fascism.

177. The Religious Personality. (4) II.

Mr. Capps

Study of the cultural influence and personal characteristics of religious men as reflected in their diaries, journals, and autobiographical writings.

181. The Theology of Paul Tillich. (4) II.

Mr. Comstock

185. Problems in Biblical Interpretation.

(4) III.

Mr. Pearson

Prerequisites: R. S. 115 and R. S. 116.

Discussion of central problems of Biblical interpretation bearing directly on current concerns.

187. Major Issues in Medieval Theology.

(4) III.

Mr. Capps

194A-B-C. Group Studies in Religious

Thought (1-5) I, II, III.

The Staff

Enrollment normally limited to 12 or fewer students.

197. Senior Seminar. (2-4) II, III.

The Staff

Prerequisite: Senior standing.

An undergraduate seminar limited to senior religious studies majors. Concentration on method and selected topics in the scholarly study of religion. Four units required.

199. Independent Studies in Religion.

(1-5) I, II, III.

The Staff

199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses**201. Proseminar in Theoretical Approaches to the Study of Religion. (4) I.**

Mr. O'Dea, Mr. Comstock

Scholarly perspectives and disciplinary approaches to critical study and research in the history and theory of religion.

220. Scholarly Approaches to Religion. (4) I.

Mr. Capps

Cross-disciplinary analysis of religious thought, experience, and behavior.

235. Seminar in Western Religious Thought.

(4)

Mr. Capps

Historical and critical examination of selected figures and movements.

238. Seminar in Modern Religious Thought.

(4)

Mr. Comstock

Detailed examination of the intellectual structures of major nineteenth and twentieth century representatives of Western religious thought. Emphasis on methodologies and systematic form of basic positions.

240. Seminar in the Sociology of Religion.

(4)

Mr. O'Dea

Detailed examination of major figures, schools and types of research.

242. Seminar in Theories of Religious

Behavior. (4)

Mr. O'Dea

An advanced exploration of the significant sociological, psychological, etc., theories to explain religious behavior.

244. Problems in Religion and Society.

(4) II.

Mr. Michaelsen

Prerequisite: Graduate standing or permission of instructor.

Influence of religion upon society and society upon religion; institutional roles; transcendent referents; law and justice; value conflicts. Analysis of the thought of such figures as Weber, Troeltsch, Reinhold Niebuhr, H. Richard Niebuhr, J.D. Murray, Ellul, and C. Dawson.

250. Seminar in the History of Religions

(Western). (4)

Mr. Comstock

An intensive study of basic religious structures or symbols (e.g., patterns of initiation, ascension rituals, myths of primordial man). Material will be drawn from the traditions of Judaism, Christianity, Gnosticism, Greco-Roman religions and Mediterranean cults.

251. Seminar in Hellenistic Religions. (4) III.

Mr. Pearson

Historical and critical examination of selected figures, texts, and phenomena pertaining to Graeco-Roman religion. Reading knowledge of Greek required.

252. Seminar in Christian Origins. (4) III.

Mr. Pearson

Prerequisite: R. S. 116 or equivalent.

Course content variable; may be repeated.

Historical and critical examination of selected figures, ideas, and movements pertaining to nascent Christianity.

253. History of Japanese Religion. (4) III.

Mr. Fridell

Bibliographical study of western language materials on Japanese religion; and individual research on a selected topic.

254. Seminar on Vedic Scriptures.

(4) II.

Mr. Panikkar

Prerequisite: Religious Studies 160 or permission of instructor.

An analysis of the philosophical and religious motifs in the ancient Vedic texts of India. Research and discussion of the following: the Vedic sacrifice, the theory of creation, the views about man and gods, and the life of meditation.

255. Seminar in Comparative Hindu-**Buddhist Thought. (4) III.** Mr. Larson

Thematic and comparative analyses of Hindu theological traditions in India with Buddhist philosophical traditions in South and East Asia. Analysis of such problems as Hinduization, Sanskritization, Chinese Buddhist appropriation of Indian ideas, and methodological presuppositions for cross-cultural study.

256A. Seminar in Cross-cultural Religious Anthropology. (4) I.

Mr. Panikkar, Mr. Larson

An interdisciplinary approach towards an integral understanding of man taken from the human experience of the various religious traditions of mankind. Focus on problems of methodology.

256B. Seminar in Cross-cultural Religious Anthropology. (4) II.

Mr. Panikkar, Mr. Larson

Sequel to 256A with focus on Primordial Myths.

256C. Seminar in Cross-cultural Religious Anthropology. (4) III.

Mr. Panikkar, Mr. Larson

Sequel to 256A and B with focus on Fundamental Symbols.

257. Seminar in Buddhist Studies (4) III.

Mr. Conze

Historical, philosophical and bibliographic analysis of selected traditions within Buddhism. Also, consideration of the relation of Buddhist traditions to related phenomena within Hinduism.

258. Seminar in Religion in America. (4)

Mr. Michaelsen

Intensive study of major figures and significant movements in the context of American culture.

265. Seminar in Formative Factors in Theology. (4)

Mr. Capps

A methodological and historical examination of the procedures by which theology has been composed and the disciplines which it comprises, with special reference to such classical treatises as Peter Lombard's SENTENCES and Thomas Aquinas' SUMMA THEOLOGICA and to such contemporary works as Rahner's THEOLOGICAL INVESTIGATIONS and Tillich's SYSTEMATIC THEOLOGY.

270. Seminar in Religious Myth and Symbol. (4) I.

Mr. Comstock

A detailed survey of important approaches to religious myth and symbolism. The various methods of literary analysis and anthropological and sociological study, linguistic analysis and the phenomenology of religion, will be considered.

594AA-ZZ. Special Topics. (2-4) I, II, III.

The Staff

Special seminar on research subjects of current interest.

595AA-ZZ. Group Studies. (1-4) I, II, III.

The Staff

Critical review of research in selected fields.

596AA-ZZ. Directed Reading and Research. (2-5) I, II, III.

The Staff

Research and Preparation of Dissertation.

598AA-ZZ. Master's Thesis Research and Preparation. (2-5) I, II, III.

The Staff

For research underlying the thesis, writing the thesis.

599AA-ZZ. Ph.D. Dissertation Preparation. (2-6) I, II, III.

The Staff

Terminal preparation of the dissertation.

 RUSSIAN

See listing under Germanic and Slavic Languages and literatures.

 RUSSIAN AREA STUDIES*Committee in Charge*Dimitrije Djordjevic, *Professor of History.*Donald B. Johnson, *Associate Professor of Russian (Chairman).*James C. McClelland, *Assistant Professor of History.*Stanley D. Krebs, *Associate Professor of Music.*Robert G. Wesson, *Professor of Political Science.*

THE MAJOR

The major in Russian Area Studies is an interdepartmental major which can be taken by a student only in conjunction with another departmental major (at this point: economics, history, political science and Russian). The major aims at the provision of a broad interdisciplinary background designed to enrich the student's professional training provided by a department. It is intended to serve the needs of the student who wishes to pursue further graduate study or who desires to obtain a general education with a greater emphasis on an important world area.

PREPARATION FOR THE MAJOR

Forty units are required in the lower division: Russian 1, 2, 3, 4, 5, 6 (or equivalent), Russian 32, and History 4A-B-C. Recommended: Political Science 45.

REQUIREMENTS FOR THE MAJOR

Thirty-seven units are required in upper division courses including: History 135A-B-C and Q, Political Science 128, 143, and Russian 115A-B, 125. Select at least five units from the following electives: Economics 107, 117, Geography 155, History 127AB, 134A-B, 124A-B-C, 135Q, Music 113, and Russian 132, 140, 104A-B-C.

The student must show proficiency in Russian equivalent to completion of Russian 101C. The requirement may be satisfied either by completion of that course with a grade C or better or by examination.

The program, of course, is to be made out by each student in cooperation with one of the members of the Committee who would normally serve in the department of the student's allied major.

SOCIAL SCIENCES

Committee in Charge

John M. Foley, Ph.D., *Associate Professor of Psychology.*

Gordon Baker, Ph.D., *Professor of Political Science (Chairman of the Committee).*

Robert Kelley, Ph.D., *Professor of History.*

James Keyser, Ph.D., *Assistant Professor of Anthropology.*

John A. Sonquist, Ph.D., *Associate Professor of Sociology.*

Majors in the following fields of the social sciences are available: anthropology, economics, geography, history, political science, and sociology. Students with interests in the individual fields are advised to study the separate descriptions in this bulletin and to consult the chairman of the appropriate department.

Anthropology, Departmental Office, NH 2051

Economics, Departmental Office, NH 3045

Geography, Departmental Office, ELLSN 3611

History, Departmental Office, ELLSN 4834

Political Science, Departmental Office, ELLSN 3834

Sociology, Departmental Office, ELLSN 2834

COMBINATION SOCIAL SCIENCES

A student who wishes to major in Combination Social Sciences *must* indicate a field of emphasis (anthropology, economics, geography, history, philosophy, political science, or sociology). An adviser will be assigned to each student by the department of emphasis.

The Combination Social Sciences major is not recommended for students who expect to work for a master's degree or for a doctorate.

Changes in the requirements listed below are under consideration and may become effective by Fall, 1973. For this reason, interested students should consult the College of Letters and Science prior to planning programs.

PREPARATION FOR THE MAJOR

All students must complete History 4A-B-C and two complete sequences from the following list: Anthropology 2 and 3, Economics 1 and 2, Philosophy 20A-B-C, Political Science (5, 10+45) or (12+45) or (100+45), Sociology 1 and 2, Geography 2 and 101. Thus, a total of 27-34 units in lower division is required in preparation for the major. The courses taken here in preparation for the Combination Social Sciences major may also, in certain cases, be used in fulfillment of the general education program, as listed in this bulletin.

THE MAJOR

Required: 39-41 units of upper division work, including 23 units in the subject field of greatest emphasis, and 8-9 units in each of two other subject fields in the social sciences, as listed above. While philosophy is not classed as a social science, it does qualify as one of the areas of emphasis in the Combination Social Sciences major. However, inclusion of philosophy as a social science subject not acceptable by the State Department of Education for a major in Social Sciences for the teaching credential. The following courses are not acceptable for upper division credit in the major: Anthropology 101, Economics 109, Political Science 100, and Sociology 101.

TEACHING CREDENTIALS

A major in Combination Social Sciences may serve as an appropriate part of the program of studies required for an elementary secondary teaching credential in California. A student wishing to secure any of these credentials should confer with designated counselors in the department of emphasis and in the Graduate School of Education.

SOCIOLOGY

¹Donald R. Cressey, Ph.D., *Professor of Sociology.*

Sethard Fisher, Ph.D., *Professor of Sociology.*

David Gold, Ph.D., *Professor of Sociology.*

Thomas F. O'Dea, Ph.D., *Professor of Sociology and Religious Studies.*

²Thomas J. Scheff, Ph.D., *Professor of Sociology.*

Tamotsu Shibutani, Ph.D., *Professor of Sociology.*

John A. Sonquist, Ph.D., *Professor of Sociology.*

^{1,2}Charles B. Spaulding, Ph.D., *Professor of Sociology.*

¹John D. Baldwin, Ph.D., *Associate Professor of Sociology.*

Robert H. Billigmeier, Ph.D., *Associate Professor of Sociology.*

William J. Chambliss, Ph.D., *Associate Professor of Sociology.*

Richard Flacks, Ph.D., *Associate Professor of Sociology.*

Morris F. Friedell, Ph.D., *Associate Professor of Sociology.*

Harvey L. Molotch, Ph.D., *Associate Professor of Sociology.*

Thomas P. Wilson, Ph.D., *Associate Professor of Sociology, (Chairman)*

Don H. Zimmerman, Ph.D., *Associate Professor of Sociology.*

Richard P. Appelbaum, Ph.D., *Assistant Professor of Sociology.*

¹Bettina J. Huber, Ph.D., *Assistant Professor of Sociology.*

¹Gary I. Schulman, Ph.D., *Assistant Professor of Sociology.*

^{1,2}Robert B. Smith, Ph.D., *Assistant Professor of Sociology.*

Bruce C. Straits, Ph.D., *Assistant Professor of Sociology.*

D. Lawrence Wieder, Ph.D., *Assistant Professor of Sociology.*

Paul L. Wuebben, Ph.D., *Assistant Professor of Sociology.*

¹ Absent on Leave, Fall 1973.

² Absent on Leave, Winter 1974.

⁴ Absent on Leave, 1973-74.

^{2,3}Homero E. Yearwood, Ph.D., *Assistant Professor of Sociology*.



Tetsuden Kashima, M.A., *Lecturer in Sociology*.

Michelle Patterson, M.Phil., *Acting Assistant Professor of Sociology*.

THE MAJOR

The sociology major is designed to provide (1) preprofessional training for students who intend to do graduate work in sociology, (2) preparation for those planning careers in education or social work, or (3) a broad background in the social sciences for those interested in a liberal education. The courses to be taken will vary with the particular interests of each student.

PREPARATION FOR THE MAJOR

Required courses: (1) Sociology 1, 2 (Sociology 101 may be substituted for Sociology 1); (2) Sociology 43 and 44; (3) one of the following sequences: (a) Anthropology 2 and one additional course in Anthropology (except physical), (b) Economics 1, 2 (c) History 4A–B–C, (d) Political Science 5, 10 and 45, (e) Psychology 1 and one upper division Psychology course. Courses taken in preparation for the major may be used to satisfy the appropriate General Education Requirements.

REQUIREMENTS FOR THE MAJOR

NOTE: To qualify as an upper division Sociology major, students *must have completed* Sociology 1 (or 101), 2, 43 and 44, or equivalents.

Required: 36 units of upper division Sociology courses, including (1) Sociology 185; (2) one of the following: Sociology 122, Sociology 130, Sociology 167, Sociology 170. In certain cases the major adviser may approve a maximum of 9 units of upper division work in closely allied fields as part of the required total of 36 units. Sociology 150 will not count towards the major. (Only 4 units of Sociology 19ABC can be applied to the upper division major.)

Recommended: Students intending to engage in graduate study in Sociology are urged to take Mathematics 30A (for more intensive preparation Mathematics 8–9 and 108A–B); Philosophy 20B–C; Sociology 103 and 104A–B.

THE DEGREE OF MASTER OF ARTS

The M.A. program in sociology is oriented toward the Ph.D. program and is viewed as an integral part of preparation for the doctorate. Students should normally apply for admission to both programs. Prospective applicants should inquire early in the academic year concerning deadlines for submission of applications for admission and financial support. Address inquiries to The Graduate Division, University of California, Santa Barbara, California 93106.

Admission: In addition to the information required in the application for admission to graduate status in the University, the applicant should submit his scores on the verbal and quantitative aptitude tests of the Graduate Record Examination.

Applicants are expected to have training substantially equivalent to the undergraduate major in this department, including research methods, statistics, and the development of sociological theory. Students with inadequate backgrounds in these areas may be admitted but are expected to make up serious deficiencies as early as possible in their first year.

DEPARTMENTAL REQUIREMENTS

The M.A. degree is awarded according to Plan II of the University: 36 units of course work, of which at least 18 are graduate units, and a Comprehensive Examination.

Prior to the Comprehensive Examination, the student must submit a short research paper (not a thesis), prepared under the supervision of an Advisory Committee of three faculty

² Absent on Leave, Winter 1974.

³ Absent on Leave, Spring 1974.

members, and have satisfied his Advisory Committee's recommendations concerning the breadth and intensiveness of his preparation in sociology, including theory, research methods, and formal analysis techniques (usually statistics, mathematics, modern logic, or linguistics). Required course work must be completed by the end of the quarter in which the examination is taken.

To receive the M.A. degree, the student must receive a "pass" or higher grade on an oral Comprehensive Examination. To continue in the Ph.D. program, a student must receive a "high pass" or an "honors pass." The M.A. program should normally be completed by the end of the second year, but a student may petition for an extension.

THE DEGREE OF DOCTOR OF PHILOSOPHY

Admission: All candidates are expected to have substantially equivalent training as required for the B.A. in this department—36 units of upper division work in sociology, including courses in research methods, statistics, and the development of sociological theory. In addition to fulfilling the general requirements for admission to graduate status, the student must submit his scores on the verbal and quantitative aptitude tests of the Graduate Record Examination.

Departmental Requirements:

- (a) To be admitted to the Ph.D. program, the student must complete the UCSB Sociology Department's requirements for the M.A., or the equivalent. Students may be admitted to graduate study in the Department without admission to the Ph.D. program pending completion of these requirements; however, these must be completed by the end of the second year.
- (b) A requirement for the Ph.D. is demonstration of competence in research methods appropriate to the student's area of major specialization. This requirement may be met by: (1) Examination, (2) passing, with a grade of B or higher, one of Sociology 201A, B, or C, or an approved alternative course (e.g., linguistics, computer programming), together with (3) approval by one faculty member of a research paper typically initiated in Sociology 201 and completed in a subsequent quarter of Sociology 596; alternatively, this requirement may be met by an M.A. research paper demonstrating appropriate research competence.
- (c) No language is required, but a student whose speciality requires knowledge of foreign languages will be required to demonstrate his competence.
- (d) Each student must pass a written preliminary examination in two areas of specialization. In consultation with his examination committee, the student will prepare a bibliography in the areas he selects and submit it to the committee for approval. The preliminary examination will be based on these approved bibliographies.
- (e) Following the preliminary examination, the student must pass a qualifying oral examination, administered by a committee appointed by the Graduate Council, normally focusing upon his major area of specialization and particularly on his proposed research.
- (f) The preliminary examination normally must be taken within 18 months after admission to the Ph.D. program. Under special circumstances, a student may petition for an extension.
- (g) The candidate must complete a doctoral dissertation. Normally, he will be called upon for an oral defense of his dissertation.

TEACHING CREDENTIALS

Either a major or a minor in sociology may serve as an appropriate part of the program of studies required for an elementary, secondary, or junior college teaching credential in California. Detailed information is given in *The Graduate School of Education Announcement*.

SOCIOLOGY

Lower Division Courses

1. Social Organization. (4) I, II, III. The Staff
The systematic study of human society; the structure of social groups, institutions, and societies, and their relationships to cultural patterns.

2. Society and Personal Growth. (4) I, II, III. The Staff
Prerequisite: Sociology 1, or consent of instructor.
The introduction of the individual into group life; the organization and perspectives of personality; the social control of conduct.

43. Introduction to Social Research. (4) I, II, III. The Staff
Prerequisite: One course in sociology, anthropology, or political science, or consent of the instructor.

Assumptions underlying scientific research. Science and values. Relations of theory to research. Elements of field-work, survey, and experimental methods.

44. Elementary Statistics. (4) I, II, III. The Staff
Prerequisite: Sociology 43.
Techniques for describing and analyzing quantitative data. Tabular and graphic presentation; commonly used measures of association; samples and sampling error; commonly used statistical tests.

45. American Society. (4) I, II, III. The Staff
Contemporary issues in American society from a sociological perspective.

48. Social Problems. (4) I, III. Mr. Chambliss
This course will analyze the sources of social problems in modern industrial societies. We will discuss in survey form the sociological studies and theoretical propositions dealing with such things as crime, mental illness, war, urban problems, and problems of inter-nation relations.

Upper Division Courses

Prerequisite to upper division courses: Sociology 1, or Sociology 101, 2, 43 and 44, or equivalent, or consent of the instructor for students who are not sociology majors.

101. General Sociology. (4) I, II, III. The Staff
The major concepts, principles, and problems of sociology. Not open to those who have had Sociology 1.

102. Sociology, The University and Society. (4) I, II, III. The Staff
There will be three main topics: Society, the University, and the Discipline. Some of the sub-topics: Social and Personal Responsibility, the University and Social Change, Departmentalization of Knowledge, Decision-Making in the University, Clientele of University, Concept of Academic Freedom, Student Power, Ethnic and Other Minorities, Organization of Profession of Sociology, and Professional vs. Liberal Education.

103. Methods of Sociological Research. (4) I. The Staff
Prerequisites: Sociology 43 and 44 or equivalent.
Fundamentals of designing, conducting, and analyzing social surveys. While the main focus is on survey techniques, problems of design and interpretation in experimental and observational studies are touched upon in terms of similarities and contrasts.

104A-B. Intermediate Statistics. (4-4) I-II. Mr. Straits
Prerequisites: Sociology 43 and 44 or equivalent.
Non-parametric statistical inference, point and interval estimation, multiple regression and path analysis, and analysis of variance in experimental designs.

105. Laboratory in Group Research. (4) II. Mr. Schulman
Prerequisites: Sociology 103 and 143, or consent of instructor.
Practicum in laboratory methods of research in the behavior of small groups.

106. Simulated Behavioral Processes. (4) III. Mr. Baldwin
Prerequisite: Consent of the instructor.
Applications of Simulation and Gaming Methodologies in the Analysis of Social and Political Processes. This course is the same as Political Science 106.

107. Demographic Analysis. (4) II. Mr. Straits
Prerequisite: Sociology 123, or consent of instructor.
Analysis of published demographic research with special reference to the accuracy of data from censuses and other sources; standardization and other methods for controlling differences in population composition; computation and use of rates and indexes, population estimates and projections.

108. Introduction to Mathematical Sociology. (4) III. The Staff
Prerequisites: Mathematics 30 and any two upper division courses in sociology, or the consent of the instructor.
Analysis of social systems through the use of mathematical tools; survey of structural, quantitative, and stochastic models.

109A-B. Computer Applications in Sociology. (4) I, II. Mr. Sonquist
Prerequisite: Sociology 103 or consent of instructor. Recommended: Sociology 104.

Computer analysis of social structures and processes. Applications of higher level programming systems to sociological problems, including simulation, content analysis, and transitional analysis.

110. Data Processing and Analysis. (4) II, III. The Staff
Prerequisites: Sociology 43 and Sociology 44.
Course will focus on basic principles of data organization and statistical analysis employing computer based research techniques. Students will learn how to utilize available user-oriented statistical programs as an integral part of the research process.

111. Computers and Society (4) II.

Mr. Sonquist

The course is an introduction to computers, their applications, and their impact on men and social institutions. The main objective of the course is to provide the student with factual and technical information to give him the ability to make reasoned judgments about computer use, to show him the social problems computers are creating along with possible remedies, and to urge him to think constructively and creatively about technology, its uses, and its social impact.

118. Electoral Politics. (4) I.

Mr. Gold

An examination of theoretical and practical issues involved in participation in the U.S. electoral system. A series of interdisciplinary lectures and core readings, supplemented by consideration in discussion sections of various facets of the forthcoming elections. This is a related course to Political Science 118.

119A-B-C. Sociology of News. (4-4-4)

I-II-III.

Mr. Gold

Prerequisite: Formal work on Nexus or other public media of communication.

Application of social science methodology to investigatory journalism. Study of social factors affecting the nature of news as it finally emerges in the mass media. Maximum of 4 units only from Soc. 119ABC will count toward the 36 upper division units for the major.

120. The Community. (4) I, III.

The Staff

Prerequisite: Consent of instructor. Recommended: Economics 1 and 2 or Economics 109.

Structure and dynamics of the local community. Comparative and historical analysis of rural, urban, and suburban communities and neighborhoods. Study of organizations, power structure, status groupings, communication processes, socialization, factional conflict, social control, ecology, equilibrium, and change.

122. Social Stratification. (4) II, III.

The Staff

Prerequisites: Sociology 1, 2, 43 and 44.

The nature of social classes and class relations, emphasizing contemporary studies of American society.

123. Population. (4) I, II.

Mr. Billigmeier, Mr. Straits

Population composition and change; differential fertility and mortality of sociocultural groups; internal and international migration; population theory and national policies; problems in areas of population pressure.

124. Collective Behavior. (4) I, II.

Mr. Shibutani

The spontaneous formation of groups in crisis-situations, with emphasis on crowd phenomena and on conflict.

126. Urban Society. (4) II, III.

Mr. Molotch, Mr. Straits

The social systems of modern urban society.

127. Sociology of Urban Planning and

Design. (4) III.

Mr. Molotch

Prerequisite: Sociology 126 or consent of instructor.

Survey of sociological implications of city planning and urban design processes.

128. Inter-Ethnic Relations. (4) I, II, III.

Mr. Fisher, Mr. Billigmeier

Patterns of racial and ethnic relations, with particular emphasis upon minorities in the United States.

129. Sociology of International Politics.

(4) III.

The Staff

Domestic social factors and national foreign policy; relation of public attitudes to foreign policy and the place of public opinion in the process of foreign policy formulation; effect of the international situation on domestic structure of society.

130. Social Change. (4) II.

The Staff

Prerequisites: Sociology 1, 2, 43 and 44.

Theories of social change and of the evolution of social systems.

131. Political Sociology. (4) I, III.

The Staff

Social and cultural bases of the political process; the study of power and authority as reflecting the interplay of interests and values; analysis of continuities and discontinuities in the democratic political system.

132. Public Opinion. (4) II.

Mr. Gold

Conceptual analysis of public opinion in relation to notions of democratic behavior and social change. Problems of measurement. Influence of the mass media, reference groups, and interpersonal relations. Effect upon contemporary American society.

133. Sociology of Mass Communications.

(4) III.

Mr. Gold

Organization and processes of mass communications in American society and developing nations; effects of the mass media on social consensus, conflict and innovation.

134. Social Movements. (4) I, III.

Mr. Flacks

Developmental processes of movements seeking alterations in the social order; a comparative analysis of utopias, classical and contemporary liberalism, socialism, and communism.

135. Sociology of Knowledge. (4) II.

The Staff

The creation, diffusion, and social influence of knowledge; thought forms and symbols as consensus-making devices; the social role of the intellectual.

136. Sociological Linguistics. (4) II.

Mr. Zimmerman

Relevance of linguistic methods for the sociological analysis of communication. Special emphasis on naturally occurring conversations and on possible relations between variant cultural backgrounds and linguistic patterns.

137. Sociology of Black Nationalism. (4) I,

III.

Mr. Yearwood

Analysis of the historical and sociological sources of Black Nationalism with special emphasis on the implications of Black Nationalism for radical social change.

138. The Sociology of Conflict. (4) I, III.

Mr. Shibutani

Conflict as a basic and continuous social process; relationships to social change and social organization; modes of resolving differences.

139. The Sociology of Black-White Relations. (4) II, III. Mr. Fisher

Prerequisite: Sociology 1 or equivalent, or Black Studies 1A, or consent of instructor.

Sociology 139 is designed to apply sociological theories and concepts to the study of relations between black and white people. The major area of focus will be North America.

140. Animal Social Behavior. (4) III. Mr. Baldwin

Prerequisites: Sociology 142 and 145.

Evolution of social behavior and social organization, with special attention to primates and conditions relevant to evolution of man.

141. Interpersonal Relations. (4) I, II. Mr. Schulman, Mr. Scheff

Prerequisite: Sociology 2 or Psychology 145, their equivalent, or consent of instructor.

The social psychology of person-to-person interaction: perceptions, norms, and sentiments that develop in face-to-face contact.

142. Socialization. (5) I. Mr. Baldwin

The learning of culture by children: analysis of children's games, of speech, and of child-parent interaction.

143. Small Groups. (4) I. Mr. Schulman

Prerequisite: Sociology 2, Psychology 1 or 101, Sociology 141 or Psychology 102; or consent of instructor.

The structure and dynamics of small groups, including the analysis of roles, interpersonal relations, and group characteristics; intergroup relations; field and laboratory research on small groups.

144. The Chicano Community. (4) II. The Staff

Origins of the Mexican-American immigrant in rural Mexico; context of contact; patterns of settlement in the United States; the Mexican community; social structure and social change; acculturation and generational patterns; community leadership and change.

145. Advanced Topics in Socialization (4) II. Mr. Baldwin

Prerequisite: Sociology 142.

The social development of individuals after the early childhood years. Data and theories will be presented relating to the development of the more complex social behaviors, cognitions, plans, etc. typical of socialized adults.

147. Current Issues in Social Psychology. (4) III. Mr. Schulman

Prerequisites: Sociology 2 and 103, their equivalents, or consent of instructor.

An advanced course dealing with topics selected by the lecturer. Emphasis is on areas of research in social psychology, such as the decision-making process, role analysis, and other current topics.

148. Analysis of Social Systems. (4) I, II, III. The Staff

This course is designed to give an extensive and fundamental approach to understanding the properties, function, and interactive processes of a social system.

150. Principles of Social Welfare. (4) II. The Staff

Basic concepts and methods of social work; the application of casework techniques; structure and function of public welfare agencies; social group work and community organizations. This course will not count towards the major.

154. Marriage and the Family. (4) I, II, III. Mr. Spaulding

The human family, past and present; adjustment in the contemporary American family.

155. Women in American Society. (4) II. Ms. Huber, Ms. Patterson

Prerequisite: Upper Division standing.

The roles and life styles of women in various American subcultures and the ideologies developing around them.

156. Sociology of Religion. (4) I, III. Mr. O'Dea

Religion as a social phenomenon; religious influence on the structure and dynamics of society; comparison of various approaches to the study of religion.

159. Occupations and Professions in Modern Society. (4) II. The Staff

A sociological analysis of the character and function of various occupations and professions in contemporary society. Emphasis is placed upon current sociological theory and research in this area of sociological inquiry.

160. Industrial Sociology. (4) II. Mr. Spaulding

Management and worker organizations, formal and informal. Accommodation among these organizations, and interaction between them and the community.

162. Sociology of the Arts. (4) II. The Staff

Art forms as media of communication and symbolic interaction; the influence of social structure and social change on the work of artists; the impact of art on social life.

163. Comparative Social Institutions: Leisure. (4) I. The Staff

Social function of leisure, its dependences on social system. Formation of leisure and institutions of leisure in East and West Europe and U.S.A. Leisure as indicator of others' properties of society. Research in leisure.

164. Sociology of Education. (4) II, III. Ms. Patterson

Changing character of education in complex societies, its relation to political, economic and technological institutions, and its effect on individual and community behavior and development.

165. The Sociology of Medicine. (4) II. Mr. Scheff

Survey of theory and research concerns: social factors determining health and illness, practitioner-patient relationships, and the organization of medical care.

166. Sociology of the Future. (4) I.

Miss Huber

The study of the effects of the rapid change of technology on social structure.

167. Complex Organizations. (4) I.

The Staff

Prerequisites: Sociology 1, 2, 43 and 44.

Institutional analysis of administrative structures and voluntary associations; informal organization, ideology, bureaucracy, decision-making, and morale.

170. Sociology of Deviant Behavior. (4) I.

Mr. Scheff

Prerequisites: Sociology 1, 2, 43 and 44.

Introduction to the sociological study of conformity and deviance, with emphasis on processes of social control.

171. Sociology of Mental Illness. (4) III.

Mr. Scheff

Prerequisite: Sociology 170. Recommended: Behavior Pathology (Psychology 125).

Sociological analysis of mental disorder: the cultural context of health and illness, social processes in the definition, recognition and treatment of mental illness.

172. Sociology of Crime and Delinquency. (4) I.

Mr. Cressey

Theories of the genesis of delinquency and crime; factors in the organization of delinquent and criminal behavior from the points of view of the person and group; delinquent and criminal behavior systems.

173. Sociology of Law. (4) I, III.

Mr. Chambliss

Study of the social and cultural factors underlying the development, maintenance and change of legal structures and processes, and analysis of theories of jurisprudence.

174. Criminal Justice and the Community. (4) II.

Mr. Yearwood

Prerequisite: Sociology 1.

Sociological analysis of law-enforcement systems and court systems; police discretion, differential implementation of the criminal law; negotiation in criminal justice decisions.

175. Sociology of Punishments and Corrections. (4) III.

Mr. Cressey, Mr. Weider

Theories of punishment and treatment used in dealing with convicts and juvenile delinquents; analysis of the systems of behavior modification used by probation, prison and parole workers.

185. Development of Sociological Thought. (4) I, III.

Mr. Zimmerman, Mr. Appelbaum

Prerequisites: Sociology 1, 2, 43 and 44.

The outstanding European and American figures and idea systems in the development of sociological thought.

190A-B. Workshop in Organizational Studies. (4) I, II.

The Staff

Prerequisite: Consent of instructor.

Both the methods of study and key theoretical

issues in organizational studies will be focused upon. Students will engage in first-hand observation of some organization and write a paper based on their experience.

194. Group Studies for Advanced Students. (2-5) I, II, III.

The Staff

Intensive study and research. This course may be taken for no more than three quarters and for a maximum of 5 units each quarter. Enrollment normally limited to 12 or fewer students.

195 A-B-C. Tutorial in the Fundamentals of Sociology. (4-4-4) I, II, III.

The Staff

Prerequisite: Consent of instructor.

Intensive directed reading and writing assignments in basic sociology. Topics covered include socialization, interaction processes, social organization, and major social institutions.

198. Readings in Sociology. (2-4) I, II, III.

The Staff

This course may be taken for no more than three quarters and for a maximum of four units each quarter.

199. Independent Studies in Sociology. (1-5) I, II, III.

The Staff

199 Courses are limited to no more than 5 units in one quarter and no more than 12 units total. The student must have 125 units of work completed.

Graduate Courses**200A-B. Sociological Theory. (4-4) II-III.**

The Staff

The first quarter is devoted to an intensive analysis of the work of the major sociological thinkers of the 19th and 20th centuries, including Durkheim, Simmel, Marx, Weber, and Mead. The second quarter is concerned with major theoretical issues in current sociology.

201A-B-C. Advanced Research Methods. (4) I, II, III.

The Staff

Prerequisites: Sociology 103 and 104A-B or equivalent.

Sociology 201A provides advanced training in survey techniques; 201B is concerned with experimental methods; and 201C is devoted to methods for collecting and analyzing data on naturally occurring behavior.

202. Issues in Sociological Inquiry. (4) II.

Prerequisite: Sociology 103.

Mr. Gold

203. Theory and Method in Sociology. (4) I.

The Staff

Prerequisites: Sociology 103 and 104, or consent of instructor.

204A-B. Advanced Statistics. (4) I, II.

Mr. Gold

Prerequisites: Sociology 103 and 104, or equivalent.

208. Formal Analysis in Sociology. (4) III.

The Staff

Prerequisite: Philosophy 31, or consent of instructor.

Clarification of existing sociological theories by resolution into explicit form. Special attention to axiomatic method.

209. Evaluating Action Research Programs. (4) II.

The Staff

Methodological critique of sociological studies that have policy implications.

210. Seminar in Ethno-methodology. (4) III.

Mr. Zimmerman

222. Social Stratification. (4) III.

The Staff

224. Seminar in Collective Behavior. (4) II.

Mr. Shibutani

226. Seminar in Human Ecology. (4) II.

The Staff

Consideration of theory and research implicit and explicit in the concept of human ecology, with particular emphasis on population composition, social and economic organization, modes of transportation and communication, and geographic factors.

228 A-B. Selected Problems in American

Racism. (4-4) I, II, III. Mr. Fisher

Sociology 228A will explore racism in the United States as a social institution. Primary emphasis will be given to theoretical treatments of racism, and to locations within social structure wherein theoretical claims can be assessed. The relevance of theoretical claims, and analyses derived therefrom, for action and for policy imperatives will be emphasized.

Sociology 228B is devoted to field explorations and research in the study of racism. It is expected that each student will come to the seminar with an area of interest in the study of racism formulated and will evolve a theoretical viewpoint within which to articulate this interest. The major work of the seminar will be the development and implementation of a theoretically relevant research design and a write-up which includes presentation, analysis, and criticism of results.

229. Race (Ethnicity) and the Political

Process: A Practicum. (4) I, II, III.

Mr. Fisher

Sociological aspects of the political process and political participation by racial (ethnic) minorities in the United States. The degree and kind of involvement in the political process, as well as the consequences of this, will be explored. Emphasis will be given to field experience and its analytic meaning.

230. Seminar in Social Change. (4) III.

Mr. Fisher

231. Seminar in Political Sociology. (4) II.

Mr. Gold

232. Public Opinion and Mass

Communication. (4) II.

Mr. Gold

239. Sociology of Law. (4) III. Mr. Chambliss

240. Social Control. (4) II. Mr. Shibutani

241. Seminar in Interpersonal Relations.

(4) I.

Mr. Scheff

242. Seminar in Language and Social Interaction. (4) III.

Mr. Wieder, Mr. Zimmerman

Prerequisite: Sociology 136 or one course in one of the following: linguistics, psycholinguistics, anthropological linguistics.

The course would cover current problems in sociolinguistics including issues in phonological, syntactic, and semantic theory as developed by linguists in order to show their relevance for sociology. Emphasis will be placed upon recent procedures developed by sociologists for studying everyday conversations. The child's acquisition of social competence will be studied within a language framework. The central idea is how the child acquires the necessary competence to engage in social interaction.

243. Practicum in Social Psychology.

(4) I, II, III.

Mr. Gold, Mr. Scheff, Mr. Shibutani

254. The Family. (4) II.

Mr. Spaulding

255. Sociological Perspectives on Women.

(4) III.

Ms. Huber, Ms. Patterson

This course will analyze the social, cultural, and economic roots of the inequality of women. It will also examine how change in female roles and position is related to institutional change (a cause and effect).

257. Theories of Religious Behavior. (4) III.

Mr. O'Dea

265. Seminar in Sociology of Medicine.

(4) III.

Mr. Scheff

267. Seminar in Complex Organizations. (4)

III.

The Staff

270. Deviant Behavior. (4)

Mr. Scheff

272. Seminar in Criminology. (4) II. The Staff

Selected topics in the sociology of crime, delinquency, criminal justice, and corrections.

Advanced Graduate Study and Research Courses

594. Special Topics. (2-5) I, II, III. The Staff

Special seminar on research subjects of current interest. May be repeated for credit on approval of Department Chairman.

595. Group Studies. (4) I, II, III. The Staff

Critical review of research in selected fields. May be repeated for credit on approval of Department Chairman.

596. Directed Reading and Research. (2-5)

I, II, III. The Staff

Individual tutorial. Plan of study must be approved by Department Chairman. May be repeated for credit on approval of Department Chairman. No more than half the graduate units required for the M.A. may be taken in Sociology 596.

597. Individual Study for M.A. and Ph.D.

Examinations. (4-8) I, II, III. The Staff

Normally taken with the student's committee chairman. Units do not count toward graduate degrees. Maximum of 24 units per examination.

598. M.A. Thesis Research and Preparation.

(0) I, II, III. The Staff

Open only to students who have petitioned the Graduate Division to take the M.A. under Plan I (Thesis and 30 units). Normally taken with the student's committee chairman.

599. Ph.D. Dissertation Preparation. (2-6) I,

II, III. The Staff

Normally taken with the student's committee chairman. Maximum of 12 units total.

SPANISH AND PORTUGUESE

¹José Luis L. Aranguren, Ph.D., *Professor of Spanish.*

David Bary, Ph.D., *Professor of Spanish.*

Enrique Martínez-López, Ph.D., *Professor Spanish (Chairman of the Department).*

⁴Winston A. Reynolds, Ph.D., *Professor of Spanish.*

Jorge de Sena, Ph.D., *Professor of Portuguese and Comparative Literature (Chairman, Comparative Literature).*

Arturo Serrano-Plaja, Licenciado en Letras, *Professor of Spanish.*

Eda Ramelli, Doctora en Letras, *Professor of Spanish, Emeritus.*

Pablo Avila, Ph.D., *Associate Professor of Spanish.*

Carlos García Barrón, Ph.D., *Associate Professor of Spanish.*

Brenton K. Campbell, Ph.D., *Associate Professor of Spanish (Chairman, Hispanic Civilization).*

¹Victor F. Fuentes, Ph.D., *Associate Professor of Spanish.*

⁵Mireya Jaimes-Freyre, Ph.D., *Assistant Professor of Spanish.*

Carlos H. Albarracín-Sarmiento, P. L., *Assistant Professor of Spanish.*

Marta Gallo, P. L., *Assistant Professor of Spanish.*

Armando D. Grant, Ph.D., *Assistant Professor of Spanish.*

John R. Kelly, Ph.D., *Assistant Professor of Spanish.*

Harvey L. Sharrer, Ph.D., *Assistant Professor of Spanish.*

Roberto de Souza, P. L., *Assistant Professor of Spanish.*

John H. Schmitt, *Acting Assistant Professor of Portuguese.*

Manuel dos Santos Lourenço, M.A., *Lecturer in Portuguese.*

Nélida López, B.A., *Lecturer in Spanish.*

Robert E. Wilson, M.A. *Lecturer in Spanish (Supervisor of Teaching Assistants).*

THE MAJOR IN SPANISH

Preparation for the Major: (i.e., lower division), Spanish 6, 25, 30, History 8A-B (Spanish 30 fulfills 3a of general education requirements and History 8A-B also fulfills the State requirement in American History and Institutions). Students who have already met the American History and Institutions requirement may substitute for History 8A-B, a two-quarter sequence chosen from among History 101A-B-Q, 150A-B, 151A-B-C, 156A-B or 158A-B.

Students who wish to make Spanish their major subject must have maintained an average grade of at least C in the Spanish courses taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Those planning to pursue graduate work in Spanish with emphasis on linguistics and philology are advised to take a minimum of two quarters of college Latin or its equivalent.

Native speakers of Spanish will not be permitted to enroll in any Spanish courses lower than 25. The Department defines "native speakers" as persons who took their primary and secondary schooling in a Spanish-speaking country. Because of the highly sequential nature of lower division language courses 1-6, students who have received in one of these courses

¹ Absent on leave, Fall 1973.

⁴ Absent on leave, 1973-74.

⁵ Absent on leave in residence, Fall 1973.

a grade lower than "C," are urged not to continue to the next higher course. Instead they should repeat the course for no credit or provide themselves with a tutor to prepare them for the next course.

All upper division courses are given in Spanish. Spanish 25 or equivalent is prerequisite to all upper division courses. Spanish 28 is prerequisite to 100A-B-C, 101A-B, 107 and 121A-B. Spanish 30 or equivalent is prerequisite to all upper division courses except Spanish 100A-B-C, Spanish 101A-B, Spanish 102A-B, Spanish 103, 104, 107, Spanish 119A-B, Spanish 121A-B, Spanish 176A-B, Spanish 177A-B, Spanish 178 or Spanish 180.

Requirements for the Major: 40 upper division units, of which 8 units may be in Luso-Brazilian literature. Students planning to do graduate work in Spanish are advised to take Spanish 122A-B and either 131A-B, 134A-B or 137A-B. Balanced preparation for graduate work should also include courses in Spanish-American literature and in Peninsular literature of the 18th, 19th and 20th centuries. Candidates for the General Secondary Credential in Spanish must complete Spanish 102A-B (Advanced Grammar and Composition) and Spanish 103 (Spanish Pronunciation).

THE MAJOR IN PORTUGUESE

Preparation for the Major: Courses 1, 2, 3, 101A-B-C, or equivalent to be tested by examination (Portuguese 101C may be omitted if Portuguese 101B has been passed with a grade of A). History 4A-B-C, 8A-B and Portuguese 8A-B are strongly recommended.

Students who wish to make Portuguese their major subject must have maintained at least an average grade of C in the college courses in Portuguese taken prior to their junior year. Students transferring from other institutions may be tested by examination.

Requirements for the Major: 40 upper division units beyond Portuguese 101A-B-C are required, including Portuguese 105A-B-C and 106A-B-C. The remaining units should be divided among other Portuguese courses in the 100 series. Portuguese 114 and 115 may (for the time being) be accepted toward the unit requirement, with the stipulation that readings for the major student be in the Portuguese language.

Majors may substitute 8 upper division units in Spanish literature, Comparative Literature, Portuguese and Brazilian history, or, with the approval of the Department, other courses that deal with Portuguese or Brazilian culture.

THE DEGREE OF MASTER OF ARTS

In addition to fulfilling the general requirements for admission to graduate status, the department requires an undergraduate major in Spanish or its equivalent. Before admission to the M.A. program in Spanish, all applicants are required to take the Advanced Test in Spanish of the Graduate Record Examination. Test applications may be obtained from the Educational Testing Service, Box 966, Princeton, New Jersey 08540, or from the Graduate Division, University of California, Santa Barbara, California 93106.

Candidates who are deficient in preparation will take the necessary undergraduate courses to make up the deficiency before beginning work in the M.A. program.

The M.A. in Spanish is obtained by successfully completing one of the following four programs, none of which requires a thesis.

Candidates for all four M.A. programs must pass a comprehensive examination, generally administered by the Department during the last two weeks of classes in any quarter. In Programs 1, 3, and 4, not all tests need be taken the same quarter. For more information regarding these examinations, see the descriptions of the individual programs.

Program 1 (Language and Culture)

This program is designed for students who wish to learn more about Spanish and Spanish American literature, linguistics, or another aspect of Hispanic culture, but who do not plan to continue on to the Ph.D. It is intended to be sufficiently flexible to serve the needs not only of prospective teachers, but also of students contemplating entry into foreign trade, diplomacy,

journalism, law, medicine, social work, or any other area whose study could be usefully combined with that of Spanish language and culture.

Each student will have an individual course program designed in consultation with the Director of Program 1 and approved by the Graduate Committee. Its structure will be determined in part by the nature of the student's study topic in course Spanish 596 (see below).

A minimum of 42 units is required, at least 18 of which must be in the graduate series. The student's program may, with prior approval of the Director of Program 1 and the Graduate Committee, include up to 12 upper division or graduate units from pertinent courses in Portuguese or in other departments.

The 18 graduate units will include 6 to 9 units of course Spanish 596 (or equivalent) to be taken during the last two or three quarters of study. In this course the student carries out, *in Spanish*, a study project (approved in advance by the Director and the Graduate Committee), the results of which are presented both in a written paper and an oral presentation before a department committee. The topic of study may be any aspect of Hispanic literature or linguistics, or of Hispanic culture and civilization (including such fields as science, philosophy, pedagogy, history, political science, sociology, art, and law). Fulfillment of this requirement may involve off-campus field work, e.g. at the Mexico City Study Center, or elsewhere, as the topic demands.

In addition to his course work, each student must demonstrate adequate preparation in three areas: literature, linguistics, and speaking and writing standard international Spanish. There is a written examination in literature based on a departmental list of basic works, which is less demanding than that of Program 2, and a written examination in linguistics based on a departmental list of examination topics and reference books in linguistics, which is less demanding than that used for Program 3. These two examinations, each of which lasts two hours, will normally be completed by the end of the fifth quarter of study, and in all cases by the end of the next-to-last quarter of study. A diagnostic examination of the student's ability to speak and write Spanish will be given no later than his first quarter of study. One purpose of the comprehensive examinations in literature and linguistics and particularly of the written paper and oral presentation in connection with Spanish 596 is to ascertain whether the student has corrected any defects noted at the time of his diagnostic examination and has attained the required level of competence, including mastery of the technical vocabulary required by his area of specialization.

Program 2 (Literature)

This program is designed primarily for students planning to go on to a Ph.D. in the field of literature. The student must complete a minimum of 36 units of graduate and upper division courses, of which at least 24 must be in the graduate series. He must complete at least one of the following courses: Spanish 121A-B or 122A-B. Up to 8 units of upper division or graduate work in Luso-Brazilian literature may count toward the degree. A reading knowledge of a pertinent foreign language other than Spanish or Portuguese is required.

The comprehensive examination is based in part on a departmental reading list of the important works of Hispanic literature. It consists of written examinations totaling five hours and a one-hour oral examination.

Program 3 (Linguistics or Studies in Bilingualism)

This program is designed primarily for students planning to go on to a Ph.D. with emphasis in Hispanic Linguistics (diachronic or synchronic) or Spanish-English bilingual problems. Completion of Spanish 100 and Spanish 121 or Portuguese 121 is a prerequisite to entrance into the program. In addition to these, Spanish 101 and 107 are required for students interested in the program with emphasis in Spanish-English bilingualism.

Each student will have an individual course program that will be designed in consultation with the Director of Program 3 and approved by the Graduate Committee. Its structure will be determined in large part by the nature of the student's research topic in course Spanish 596. Depending upon his individual needs, a student's program may, with the prior approval of the Director of Program 3 and the Graduate Committee, include varying numbers of courses in

Portuguese or other departments (e.g., Linguistics, Anthropology, English, Classics, French and Italian, German and Slavic, Mathematics, Biological Sciences, Philosophy, Sociology, Speech).

A minimum of 36 units is required, at least 18 of which must be in the graduate series. These will include 6 units of course Spanish 596, in which the student will study a topic related to his special program and complete a research paper. A reading knowledge of a pertinent foreign language other than Spanish and Portuguese is required.

The comprehensive examination comprises a written test in linguistics and a written test in literature, based, as in Program 1, on a reduced departmental reading list of the basic works of Hispanic literature. Each test is followed by a one-hour oral examination.

Program 4 (Hispanic and Luso-Brazilian Studies)

This program is designed primarily for students who wish to acquire a broad background in Hispanic and Luso-Brazilian studies, including those contemplating subsequent work toward a doctoral degree.

Portuguese 101A–B–C or Portuguese 11 is prerequisite to entrance into the program.

A minimum of 40 units is required, at least 24 of which must be in the graduate series. Spanish 121A–B or Portuguese 121A–B and a reading knowledge of a pertinent foreign language other than Spanish and Portuguese are required.

Each student will have an individual course program designed in consultation with the Director of Program 4 and approved by the Graduate Committee. Its structure will be determined in large part by the nature of the student's interests and long-range goals. However, the student is expected to acquire a knowledge of the principal works in Hispanic, Portuguese and Brazilian literatures. The comprehensive examination is based in part on departmental reading lists of important texts in the literatures concerned. It consists of two written tests, each followed by a one-hour oral examination.

THE DEGREE OF DOCTOR OF PHILOSOPHY IN SPANISH

In addition to fulfilling the general requirements for admission to graduate status, the applicant must satisfy the following departmental requirements:

The student contemplating a doctorate in Spanish will normally follow a course of study leading to the M.A. degree under Programs 2 or 3 (see above). Each M.A. examining committee will make a recommendation to the Graduate Committee regarding the advisability of the student's continuing work toward the Ph.D.

Students entering the program from other universities are required to take the Advanced Test in Spanish of the Graduate Record Examination. (For more information, see above: The Degree of M.A.) Such students must begin making up any course deficiencies during their first quarter of residence. At the end of one or two quarters, their work will be evaluated by the Department, and they may, if necessary, be tested by examination; only those who receive a favorable report will be permitted to continue working toward admittance to candidacy.

Required for the Ph.D. are the following or equivalent courses: Spanish 121A–B, one quarter of 212, and 214A–B. Each student must take a minimum of six quarters of graduate studies (preferably related to his areas of specialization) within the Department after completion of the M.A.

The student will also complete three graduate courses (minimum of 9 units) in a minor field with a grade of A or B prior to the qualifying examination. It is expected that most students will minor in another literature (the possibilities include Portuguese or Brazilian literature, Comparative Literature, and Latin), but an individual with a strong interest and adequate background in another of the humanities, or even in an appropriate science, may minor in one of those fields. In any case, the courses in the minor must bear a demonstrable relation to the student's special interests within the major field of Hispanic literature or linguistics and must be approved by the Department.

Before being admitted to candidacy for the doctorate, the student must demonstrate a good reading knowledge of two foreign languages besides Spanish and Portuguese. The

choice of languages will depend largely upon the student's individual needs. A general command of Spanish and a reading knowledge of Portuguese will be assumed in the student, but not formally tested.

By the end of his first or second quarter in the Ph.D. program, each student will normally have selected two areas of specialization (see below), a field of maximum interest (see below), a projected dissertation topic, and his minor. These decisions shall be made in consultation with the Graduate Adviser and approved by the Graduate Committee. The Graduate Committee will then assign the student an advisory committee to assist him in preparing for the qualifying examination, which will consist of two written examinations covering the areas of specialization and field of maximum interest, and, subsequently, an oral examination.

The qualifying examination, which must be passed before advancement to candidacy, will test the student's knowledge in his field of maximum interest and in two areas selected by the student from among the following: 1) Medieval Philology and Literature, 2) Literature of the 16th and 17th centuries, 3) Literature of the 18th and 19th centuries, 4) 20th century literature, 5) Hispanic linguistics. The student will be expected, in addition, to demonstrate a knowledge of Portuguese and Brazilian readings in the corresponding two areas, based on a departmental list.

The field of maximum interest will normally be within the student's two areas of specialization and related to his projected dissertation topic. It may include an individual list of Portuguese and Brazilian readings prepared by the student's doctoral committee.

Upon passing the qualifying examination the student is advanced to candidacy. He will thereupon formally select a dissertation topic, in consultation with his doctoral committee. Upon approval of the topic and research plan by the doctoral committee, a dissertation committee will be appointed, under whose direction the candidate will write his dissertation; upon its successful completion, he will be awarded the degree.

TEACHING CREDENTIALS

Either a major or a minor in Spanish may serve as an appropriate part of the program of studies required for an elementary, secondary or junior college teaching credential in California.

All candidates for a General Secondary Credential with either a major or minor in Spanish must complete Spanish 102A-B (Advanced Grammar and Composition) and Spanish 103 (Spanish Pronunciation). Spanish 100A-B-C (The Spanish Language: a Linguistic Approach), and Spanish 119A-B (Spanish Institutions and Culture), Spanish 176A-B (Contemporary Spanish Culture), Spanish 177A-B (Spanish American Culture), or Spanish 178 (Mexican Culture), are recommended.

The student should confer with designated counselors in the Department of Spanish and Portuguese and in the Graduate School of Education concerning a teaching minor and other information regarding curricula for the credentials.

PORTUGUESE

Lower Division Courses

- 1. Elementary Portuguese. (4) I. The Staff
- 2. Elementary Portuguese. (4) II. The Staff
- 3. Elementary Portuguese. (4) III. The Staff
- 8A-B. Portuguese Conversation.
(2-2) I, II or II, III. The Staff
Prerequisite: Portuguese 3 or equivalent, or consent of instructor.
- 10. (12) Summer Session. The Staff
Accelerated course for undergraduates.
- 11. Intensive Portuguese. (5) I, II, III. The Staff

To meet reading requirements of graduate students.

Upper Division Courses

- 101A-B-C. Advanced Reading and Composition. (4-4-4) I, II, III.
Mr. Schmitt, Mr. Lourenço
Prerequisite: Portuguese 3 or equivalent.
Analysis of selected literary texts and development of skills in writing Portuguese.
- 105A-B-C. Survey of Portuguese Literature.
(4-4-4) I, II, III. Mr. Sena, Mr. Sharrer, Mr. Lourenço
Prerequisite: Portuguese 101A-B-C or consent of the instructor.
A. Portuguese literature from its origins to the 16th century.
B. Portuguese literature of the 16th, 17th and 18th centuries.
C. Portuguese literature of the 19th and 20th centuries.

106A-B-C. Survey of Brazilian Literature.
(4-4-4) I, II, III. Mr. Sena,
Mr. Schmitt

Prerequisite: Portuguese 101A-B-C or consent of the instructor.

A. Brazilian literature of the colonial period.
B. Brazilian literature from the 19th century to 1922.

C. Brazilian literature from 1922 to the present.

132A-B. Luis de Camões. (4-4) I, II or II, III.

Mr. Sena

A study of Camoes' lyric poetry and epic poem, *Os Lusíadas*.

185. Brazilian Novel of the Twentieth Century. (4) I, II or III. Mr. Sena,
Mr. Schmitt

A study of the Brazilian novel from Machado de Assis to the present, including authors such as Lima Barreto, Erico Veríssimo, Guimarães Rosa, Lins do Rêgo, Graciliano Ramos, J. Amado, Lispector, Antonio Callado, etc.

189. Brazilian Modernism. (4) I, II or III.
Mr. Sena, Mr. Schmitt

An introduction to the poetry and prose fiction of the Brazilian avant-garde of the 1920's and 30's.

199. Independent Studies in Portuguese.
(1-5) I, II, III. The Staff

Independent studies with one of the departmental instructors in Portuguese, to permit study of subject desired by student but not covered in course offerings.

Graduate Courses

232. Studies on Camões. (3) I, II, III.

Mr. Sena
Camoes' works in their historical and cultural contexts.*

240. Studies in Portuguese Mannerist and Baroque Literature. (3) I, II, III.

The Staff
Portuguese poetry and prose of the 16th and 17th centuries.*

245. Studies in Brazilian Colonial Literature.
(3) I, II, III. The Staff

Selected authors and topics in Brazilian literature of the 16th, 17th and 18th centuries.*

250. Studies on Eça de Queiroz and the Portuguese Realistic Novel (3) I, II, III.

The Staff
Eça de Queiroz's work, his conception of Realism, his influence on Spanish, Spanish American and Brazilian literature, his most important followers.*

255. Studies on Machado de Assis and the Brazilian Novel (3) I, II, III. The Staff

Machado de Assis' novelistic work; its innovative approach as a basis of modern fiction. Other novelists of his times will be studied also.*

260. Studies in Brazilian Post-Independence Literature. (3) I, II, III. The Staff

Selected authors and literary movements of the 19th and 20th centuries.*

265. Studies on Fernando Pessoa and the avant-garde. (3) I, II, III. The Staff

Pessoa's poetry, its influence on contemporary Portuguese poetry and its relationship to the world avant-garde movement.*

270. Studies in Portuguese African Literature. (3) I, II, III. The Staff

Modern authors from Cabo Verde, Angola, and Mozambique.*

596. Directed Reading and Research.
(2-18) I, II, III. The Staff

Prerequisite: Graduate Status.
Directed reading and research. Individual tutorial, instructor usually student's major professor. Written proposal for each tutorial must be approved by Department Chairman and filed with Graduate Division. Letter grade or S/U.

SPANISH

Lower Division Courses

1. Elementary Spanish. (4) I, II, III. The Staff

2. Elementary Spanish. (4) I, II, III. The Staff

Prerequisite: Spanish 1 or equivalent.

3. Elementary Spanish. (4) I, II, III. The Staff

Prerequisite: Spanish 1 and 2 or equivalent.

4. Intermediate Spanish. (4) I, II, III.

Prerequisite: Spanish 3 or equivalent. The Staff

4R. Intermediate Spanish. (4) I, II, III.

Prerequisite: Spanish 3 or equivalent. The Staff
Emphasis on reading and translation. Not intended for Spanish majors.

5. Intermediate Spanish. (4) I, II, III.

Prerequisite: Spanish 4 or equivalent. The Staff

5R. Intermediate Spanish. (4) I, II, III.

Prerequisite: Spanish 4 or equivalent. The Staff
Emphasis on reading and translation. Not intended for Spanish majors.

6. Intermediate Spanish. (4) I, II, III.

(For Spanish majors) The Staff
Prerequisite: Spanish 5 or equivalent.

6R. Intermediate Spanish. (4) I, II, III.

Prerequisite: Spanish 5 or equivalent. The Staff
Reading emphasis.
(Intended primarily for majors in English and other literatures than Spanish)

* Course content will vary from quarter to quarter, and it may be repeated for credit with the consent of the Departmental Graduate Adviser.

- 8A. Spanish Conversation. (2)**
I, II, III. The Staff
Prerequisite: Spanish 3 or equivalent.
- 8B. Spanish Conversation. (2)**
I, II, III. The Staff
Prerequisite: Spanish 4 or equivalent.
- 8C. Spanish Conversation. (2)**
I, II, III. The Staff
Prerequisite: Spanish 5 or equivalent.
- 9A. Advanced Spanish Conversation.**
(2) I, II, III. The Staff
Prerequisite: Spanish 6 or equivalent.
- 9B. Advanced Spanish Conversation.**
(2) I, II, III. The Staff
Prerequisite: Spanish 25 or equivalent.
- 9C. Advanced Spanish Conversation.**
(2) I, II, III. The Staff
Prerequisite: Spanish 25 or equivalent.
- 11. Intensive Spanish for Graduate Students.**
(8) I, II, III. The Staff
- ††14. Individual Basic Spanish.**
(1-24) I, II, III.
Equivalent to Spanish 1-2-3-4-5-6. Each student proceeds at his own pace through a sequence of 24 achievement units. Mastery of each achievement unit earns the student one unit of credit and permits him to begin the following achievement unit. Earned units of credit are reported to the Registrar at the end of each quarter.
- 15A-B-C. Elementary Chicano Spanish.**
(4-4-4) I, II, III. The Staff
Designed to make student functional in the language of the barrio and colonia.
- 16A-B-C. Intermediate Chicano Spanish.**
(4-4-4) I, II, III. The Staff
Designed to make student functional in language of the barrio and the colonia.
- 25. Advanced Spanish. (5)**
I, II, III. The Staff
Prerequisite: Spanish 6 or equivalent.
- 28. Introduction to Linguistics (3) I, II, or III.** The Staff
Prerequisite: Spanish 6 or equivalent.
- *30. Introduction to Hispanic Literature.**
(3) I, II or III. The Staff
Prerequisite: Spanish 6 or equivalent.

Upper Division Courses

Spanish 25 or equivalent is prerequisite to all upper division courses. Spanish 28 is prerequisite for Spanish 100A-B-C, Spanish 101A-B, Spanish 107 and Spanish 121A-B. Spanish 30 or equivalent is prerequisite to

all upper division courses except Spanish 100A-B-C, Spanish 101A-B, Spanish 102A-B, Spanish 103, Spanish 104, Spanish 107, Spanish 119A-B, Spanish 121A-B, Spanish 176A-B, Spanish 177A-B, Spanish 178 or Spanish 180.

- 100A-B-C. The Spanish Language: A Linguistic Approach. (3-3-3) I, II, III.** The Staff
100A. Phonetics and Phonemics. Prerequisites: Spanish 25 and 28.
100B. Morphosyntax. Prerequisites: Spanish 25 and 28.
100C. Semantics. Prerequisites: Spanish 25 and 28.
- 101A-B. American Spanish. (3-3) I, II or II, III.** Miss Gallo, Mr. de Souza
Geographical, social and stylistic distribution of phonemic, morphosyntactic and lexical features in American Spanish, with special reference to the Spanish spoken in the U.S.
Prerequisites: Spanish 25 and 28.
- 102A-B. Advanced Grammar and Composition. (4-4) I, II or II, III.** The Staff
Prerequisite: Spanish 25.
- ††103. Spanish Pronunciation. (2) I, II or III.** Mr. Avila
Practical exercises in Spanish pronunciation with a view to correcting deficiencies.
- 104. Spanish Versification. (4) I, II or III.** The Staff
Analysis and description of the basic units of Spanish verse: number of syllables, distribution of stress, accent and rhyme; classification of verses and stanzas, as found in Spanish and Spanish American texts of various periods.
- 107. Languages in Contact. (4) I, II, III.** Mr. de Souza
Cultural contact and language contact. The bilingual community and the bilingual individual. Spanish-English interaction.
- 117A-B. Essayists of Spain and Spanish America. (4-4) I, II or II, III.** Mrs. Jaimes-Freyre, Mr. Aranguren
Representative essayists of Spain, from Saavedra Fajardo to Ortega y Gasset and of Spanish America, from Sarmiento and Montalvo to Alfonso Reyes and Octavio Paz.

- 119A-B. Spanish Institutions and Culture. (4-4) I, II or II, III.** The Staff
Study of the development of the Spanish nation, with special focus on key social and political institutions, the arts, and major currents of thought.

* May be used to satisfy foreign literature requirement.

†† Enrollment by permission of instructor only.

121A-B. History of the Spanish Language.(4-4) I, II or II, III. Mr. de Souza,
Mr. CampbellDevelopment of the Spanish language from its
origins to modern times.

Prerequisite: Spanish 25 and 28.

122A-B. Medieval Spanish Literature.(4-4) I, II or II, III. Mr. Sharrer,
Mr. Martínez-LópezA detailed survey of the main trends in Spanish
literature to 1500.**123A-B. El Romancero. (4-4) I, II or II, III.**

Mr. Martínez-López, Mr. Sharrer

History of Spanish ballad. Hispanic balladry in
Spanish America, the United States and among
Sephardic Jews.**124A-B. Introduction to the Theory of****Literary Criticism. (4-4) I, II or II, III.**

Mr. Grant, Mr. Campbell

Techniques of analyzing literary works in terms of
language, forms and structure, with attention to the
special problems of the Spanish language; close
readings of specific Hispanic poems and short stories.**131A-B. Golden Age Poetry. (4-4) I, II or**II, III. Mr. Martínez-López,
Mr. ReynoldsLyric poetry of the 16th and 17th centuries:
Garcilaso, Luis de León, San Juan de la Cruz, Lope,
Quevedo, Góngora and others.**134A-B. Golden Age Prose. (4-4) I, II or**

II, III. Mr. Reynolds, Mr. Serrano-Plaja

The main novelistic types of the period: novel of
chivalry; pastoral novel; picaresque novel and others
(*Don Quijote* excluded).**137A-B. Golden Age Drama. (4-4) I, II or**II, III. Mr. Reynolds,
Mr. Martínez-LópezThe classic *Comedia*, by Lope, Tirso, Alarcón,
Calderón and other dramatists.**140A-B. Cervantes: *Don Quijote*. (4-4)**I, II, or II, III. Mr. Serrano-Plaja
Mrs. Jaimes-FreyreReading and discussion of the first and second
parts of *Don Quijote*.**141A-B. Cervantes: Other Works. (4-4)**I, II or II, III. Mrs. Jaimes-Freyre,
Mr. Serrano-PlajaReadings from the minor works of Cervantes:
Novelas ejemplares, *Comedias*, *Entremeses*.**145. Colonial Spanish American Literature.**(4) I, II or III. Mr. Albarracín,
Mr. AvilaSuch writers as Garcilaso de la Vega, el Inca,
Bernardo de Balbuena, Carlos de Sigüenza y
Góngora, Sor Juana Inés de la Cruz, Manuel M. de
Navarrete.**150. XVIIIth Century Spanish Culture.**(4) I, II or III. Mr. Barrón, Mr. Bary
Literature, social history, artistic and intellectual
developments of 18th century Spain.**156A-B. Spanish American Literature from
Independence to the Present. (4-4)**I, II or II, III. Mr. Avila,
Mrs. Jaimes-FreyreRepresentative authors such as Heredia, Bello,
Sarmiento, Palma, J. Hernández, Z. de San Martín,
Darío, Rodó, A. Reyes, G. Mistral.**160A-B. XIXth Century Spanish Prose.**(4-4) I, II or II, III. Mr. Barrón,
Mr. ArangurenRepresentative selections from the *costumbristas*,
such as Larra and Mesonero, and from novelists
such as Alarcón, Pereda, Valera, Galdós and others.**164. XIXth Century Spanish Poetry. (4)**

I, II or III. Mr. Barrón, Mr. Fuentes

Works of Espronceda, Zorrilla, Bécquer, Rosalía de
Castro and others.**167. XIXth Century Spanish Drama. (4)**

I, II or III. Mr. Barrón

Representative works of such dramatists as Rivas,
Zorrilla, Echegaray and others.**170A-B. Spanish Literature from 1898 to**

1936. (4-4) I, II or II, III.

Mr. Fuentes, Mr. Bary

Readings of such authors as Unamuno, Baroja,
Azorín, Valle-Inclán, Antonio Machado, Ortega,
Gómez de la Serna, Guillén, García Lorca and others,
analyzed in their historical and social context.**175. Contemporary Spanish Literature. (4)**

I, II or III. Mr. Bary, Mr. Fuentes

A study of the main trends of post-war Spanish
novel, theater and poetry, in their historical and
social context.**176A-B. Contemporary Spanish Culture.**(4-4) I, II or II, III. Mr. Aranguren,
Mr. FuentesMain developments in Spanish thought, research
and education since the beginning of the 20th cen-
tury.**177A-B. Spanish American Culture. (4-4)**

I, II or II, III. The Staff

Leading social, institutional, intellectual and ar-
tistic trends from the 16th century to the present.**178. Mexican Culture. (4) I, II, or III.**

Mr. Avila, Mr. Grant

Prerequisite: Spanish 25. May not be taken for
credit if 180 taken.Social, institutional, intellectual and artistic trends
in the development of modern Mexico.**183. Studies in Hispanic Literatures. (4)**

I, II, III. The Staff

Prerequisites: Spanish 25, 30, upper division
status.Studies in literary topics to be chosen for each
quarter according to current interest of students and
faculty.^o^oMay be repeated for credit on different topics.

185A-B. Modern Spanish American Novel.(4-4) I, II or II, III, Mr. Albarracín,
Miss Gallo

Spanish American novel from Romanticism to the present, including readings in such representative authors as Blest Gana, Gálvez, Barrios, Güiraldes, Azuela, Carpentier, Fuentes, Cortázar, García Márquez and others.

186A-B. Modern Mexican Literature. (4-4)

I, II or II, III. Mr. Grant, Mr. Avila

Major trends in the literature of the Mexican people, including such movements as Modernist poetry, the novel of the Revolution, the *Contemporáneos* and others.

187. Modern Hispanic Drama. (4) I, II or III.

The Staff

A. Representative dramatists of Spain such as Unamuno, Valle-Inclán, García Lorca, Buero Vallejo, and others.

B. Plays of representative dramatists: Carballido, Solórzano, Wolff, Cuzzani, Marqués and others.

189A-B. Modern Spanish American Poetry.

(4-4) I, II or II, III.

Mrs. Jaimes-Freyre, Mr. Grant

Modernist and Vanguard schools: Darío, Herrera y Reissig, Huidobro, Vallejo, Neruda, Paz and others.

191A-B-C. The Theme of Don Juan in**Spanish Literature. (4-4-4) I, II, III.**

Mr. Serrano-Plaja

The theme of Don Juan as developed by representative Spanish authors from the 16th to 20th centuries.

198. Individual Hispanic Authors.

(4) I, II, III.

The Staff

Intensive reading and discussion of selected Hispanic authors. May be repeated for a total of 20 units.

199. Independent Studies in Spanish.

(1-5) I, II, III.

The Staff

Prerequisites: upper division status and departmental approval. Independent studies in selected subjects not covered by course offerings.

Graduate Courses**201A-B-C. Historical Grammar and Old Spanish Readings. (3-3-3) I, II, III.**

Mr. de Souza, Mr. Campbell

Prerequisite: 2 quarters College Latin or equivalent.

209A-B-C. Dialectology. (3-3-3) I, II, III.

Miss Gallo

212A-B. Bibliography and Methods of**Research. (3-3) I, II or II, III.**

Mr. Barrón, Mr. Campbell, Miss Gallo

A. Literature

B. Linguistics

213A-B. Theory of Literary Criticism.

(3-3) I, II or II, III.

Mr. Campbell,
Mr. Grant**214A-B. History of Hispanic Literary****Criticism. (3-3) I, II or II, III.**

Mr. Campbell

218. Individual Hispanic Authors.

(3-3-3-3-3) I, II, III.

The Staff

222. Studies in Medieval Peninsular**Literature. (3-3-3) I, II, III. Mr. Sharrer****231A-B-C. Poetry of the Golden Age of Spain. (3-3-3) I, II, III.**

Mr. Martínez-López, Mr. Reynolds

232A-B-C. The Spanish Mystics. (3-3-3)

I, II, III.

Mr. Serrano-Plaja,
Mr. Aranguren**234A-B-C. Narrative Prose of the Golden Age of Spain. (3-3-3) I, II, III.**

Mr. Serrano-Plaja

235A-B-C. Moralists and Satirists of the XVth and XVIIth Centuries. (3-3-3)

I, II, III.

Mr. Martínez-López,
Mr. Aranguren**237A-B-C. Comedia of the Golden Age of Spain. (3-3-3) I, II, III. Mr. Reynolds,****Mr. Serrano-Plaja****238A-B. Auto Sacramental. (3-3)**

I, II, or II, III.

Mr. Martínez-López

240A-B-C. Studies on Cervantes.

(3-3-3) I, II, III.

Mr. Serrano-Plaja, Mrs. Jaimes-Freyre

245A-B-C. Studies in Spanish American Colonial Literature. (3-3-3) I, II, III.

Mr. Reynolds, Mr. Albarracín

260A-B-C. Studies in XIXth Century**Spanish Literature. (3-3-3) I, II, III.**

Mr. Aranguren, Mr. Barrón

270A-B-C. Studies in XXth Century Spanish Literature: 1898-1936. (3-3-3) I, II, III.Mr. Bary, Mr. Aranguren,
Mr. Serrano-Plaja**275A-B-C. Spanish Literature since the Civil War. (3-3-3) I, II, III.**

Mr. Aranguren, Mr. Bary, Mr. Fuentes

280A-B-C. Studies in XIXth and XXth Century Spanish American Poetry. (3-3-3) I, II, III.

Mrs. Jaimes-Freyre, Mr. Bary

283A-B-C. El Modernismo. (3-3-3) I, II, III.

Mrs. Jaimes-Freyre, Mr. Albarracín

285A-B-C. The Novel in Spanish America. (3-3-3) I, II, III.Mr. Albarracín,
Miss Gallo

290A-B-C. The Literature of a Single Spanish American Country. (3-3-3) I, II, III. The Staff

TA 292. Instructional Procedures and Supervised Teaching in Spanish. (3) I, II or III. Mr. Wilson

594A-594ZZ. Special Topics. (1-4) I, II, III. The Staff

Special seminar on research subjects of current interest. S/U or letter grade. Graduate Council approval of S/U grading must be requested.

596A-596ZZ. Directed Reading and Research. (2-18) I, II, III. The Staff

Individual tutorial, not to be used in place of 597. A written proposal for each tutorial must be approved by the Department Chairman and filed with the Graduate Division. Letter grade or S/U.** Minimum of 2 units per quarter. No more than half the units necessary for the M.A. degree may be taken in 596.

597A-597ZZ. Individual Study for M.A. Comprehensive or Ph.D. Exams. (2-12). I, II, III. The Staff

Maximum of 12 units per quarter. S/U grade only. No unit credit allowed toward advanced degree(s). Enrollment limited to 24 units per examination.

599A-599ZZ. Ph.D. Dissertation Preparation. (2-12) I, II, III. The Staff

Only for preparation of the dissertation. Reserved for writing the dissertation. Normally taken with the chairman of the student's doctoral committee. S/U grade only. Maximum of 12 units total.

Courses Given in English

Portuguese 114. Literature of the Portuguese Expansion. (4) I, II or III. Mr. Sena
Literary Masterpieces of Portuguese Golden Age. In English.

***Portuguese 115. Brazilian Literature in English Translation** (4) I, II, or III.

Mr. Sena, Mr. Schmitt
Readings in English of significant writers and poets of 19th and 20th century Brazil: Almeida, Machado de Assis, Lins do Rêgo, de Andrade, Meireles, Guimarães Rosa, Suassuna and others.

Portuguese 121A-B. History of the Portuguese Language. (4-4) I, II or II, III.

Mr. Sharrer
Introductory study of evolution of Portuguese language, origins to modern times. In English.

Portuguese 125A-B. Culture and Civilization of Portugal and Brazil. (4-4) I, II or II, III. The Staff

In English. The distinctive features of Portugal and Brazil as manifested in their institutions, art, music and literature. Satisfies General Education requirement 4 and 4C.

***†Spanish 115A-B. Masterpieces of Spanish Literature in English Translation.**

(4-4) I, II or II, III. The Staff
A close reading of selected works—poetry, drama, novel—from the Middle Ages, the "Golden Age," and the Contemporary Period, such as *The Poem of the Cid*, *Don Quijote*, and selections from Unamuno and García Lorca.

†*Spanish 120A-B. Spanish American Literature in English Translation. (4-4) I, II or III. The Staff

Outstanding 20th century writers of Latin America, with emphasis on contemporary Argentina, Chile, Colombia, Mexico and Peru.

***Spanish 180. Mexican Civilization.** (4) I, II, III. The Staff

Social, institutional, intellectual and artistic trends in development of Mexico.
May not be taken for credit if 178 already taken.

***Spanish 181. Social Poetry of Spain and Latin America in English Translation.** (4) I, II or III. Mrs. Jaimes-Freyre

Poets such as Cesar Vallejo, Pablo Neruda, Nicanor Parra and others.

***Spanish 188. Latin American Black Poetry in English Translation.** (4) I, II or III. Mrs. Jaimes-Freyre

Black poetry in the Caribbean and in Brazil: Nicolás Guillén, Emilio Ballagas and others.

Other Departmental Offerings Accepted toward Major:

AEP 191L. Bibliography I. (2) The Library Staff

* May be used to satisfy foreign literature requirement.

** Only department approval of S/U for 596 required.

* Do not count toward preparation in Spanish major or minor.

† Not open to Spanish major or minor.

SPEECH

Theodore D. Hanley, Ph.D., *Professor of Speech Science.*
Glen E. Mills, Ph.D., *Professor of Speech (Chairman of the Department).*
Upton S. Palmer, Ph.D., *Professor of Speech, Emeritus.*
Edwin R. Schoell, Ph.D., *Professor of Speech.*
John C. Snidecor, Ph.D., *Professor of Speech Pathology, Emeritus.*

Sanford E. Gerber, Ph.D., *Associate Professor of Audiology.*
 Rollin W. Quimby, Ph.D., *Associate Professor of Speech.*
 Janis M. Costello, Ph.D., *Assistant Professor of Speech Pathology.*
 Anthony J. Mulac, Ph.D., *Assistant Professor of Speech.*
 Gerry F. Philipsen, Ph.D., *Assistant Professor of Speech.*
 Carol A. Prutting, Ph.D., *Assistant Professor of Speech Pathology.*



Carole C. Carmalt, M.A., *Lecturer in Speech Pathology.*
 Joseph R. Di Bartolomeo, M.D., *Research Associate in Audiology.*
 Jesse R. Freeland, M.D., *Research Associate in Speech Pathology.*
 Donald R. Gillies, M.D., *Research Associate in Audiology.*
 Harris Meisel, M.D., *Research Associate in Speech Pathology.*

THE MAJOR

Two majors are offered within the Department of Speech: speech and hearing, and communication studies. The former is related to the health sciences, while the latter is related to the humanities and social sciences. Both lead to graduate work. California teaching credentials require five years of work.

SPEECH AND HEARINGS MAJOR

Students must meet the General Education requirement as outlined in this catalog.
Lower Division—Speech 20, Psychology 1 or 101, Linguistics 20, Biology 20 or 21, Physics 11.

Upper Division—Speech 150, 155A–B, 165, 166, 167, 172, 173A–B, 174, 175, 178.

COMMUNICATION STUDIES MAJOR

Students must meet the General Education requirements as outlined in this catalog. Courses listed below, whether in General Education sequence or not, are required in the communication studies major.

Preparation for the Major—12 units from Speech 10, 11, and 35; 12 units from either (1) Political Science and History, or (2) Psychology, Anthropology, and Sociology. Some will apply toward General Education requirements.

Required Theoretical Core—20 units from Speech 129, 136, 150, 158, and 159.

Electives—20 units, 16 of which are upper division, from the following: Speech 40, 47, 112, 117, 131, 132, 134, 140, 142, 149AB, 157, 180, 181, and 185.

GRADUATE PROGRAMS

The M.A. Degree

The department offers work leading to the M.A. degree in speech pathology and audiology and in communication studies.

Although normally the entering graduate student has an undergraduate major in speech, qualified students from related areas may be admitted as limited students with the understanding that they must acquire a background comparable in breadth to that of the B.A. candidates in speech on this campus.

Requirements are specified in publications of the Graduate Division. They include at least 30 units of courses, a thesis, the Introduction to Graduate Study in Speech, and either a foreign language or a cognate field. The candidate in speech pathology and audiology will be required to demonstrate adequacy in the field of statistics. Completion of the M.A. qualifies the student for membership in the American Speech and Hearing Association and leads to satisfaction of the requirements for the certificate of clinical competence. The UCSB M.A. program is accredited by the Education and Training Board of A.S.H.A.

The Ph.D. in Speech and Hearing

A multi-disciplinary non-clinical program leading to the Ph.D. degree in Speech and Hearing Sciences is offered jointly with the University of California, San Francisco. A year's residence on each campus is required, with residency after admission to candidacy to be completed on the campus of the student's choice.

Requirements

1. Satisfactory completion of written and oral qualifying examinations.
2. The student must demonstrate proficiency in either a foreign language or a cognate field judged appropriate by his advisory committee.
3. Oral defense of a doctoral dissertation.

TEACHING CREDENTIALS

The major in communication studies may serve as an appropriate part of the program of studies required for teaching credentials in California. A student wishing to prepare for any of these credentials should confer with designated counselors in the Department of Speech and in the Graduate School of Education.

California Credential in Remedial Speech and Hearing

The department offers the course sequence required by the State Department of Education for the preparation of speech and hearing clinicians in the public schools. This restricted credential requires a major in speech and hearing with courses at the graduate and undergraduate level. This credential does not qualify the holder for classroom teaching in academic subjects.

The student will complete the specified number of units listed in each section below:

Credential Sequence

30 units in the following breadth areas:

	Units
1. Psychological and sociological aspects of human development. <i>Education 212. Psychological Foundations of Education</i>	5
2. Psychology (growth and development) of exceptional children. (Covered in Psychology 1, Speech 172, 173A-B, and 167. Some students will elect Psychology 104, <i>The Exceptional Child</i> .)	
3. Bases of speech, hearing and language, including anatomical, physiological, neurological, psychological and physical aspects. <i>Speech 150. Phonetics</i>	4
<i>Speech 155A. Speech Science: Acoustics</i>	3
<i>Speech 155B. Speech Science: Physiology</i>	3
4. Speech and language development, including genetic and cultural aspects. <i>Linguistics 20. Language and Linguistics</i>	4
<i>Speech 165. Language Acquisition</i>	4
5. Objectives and basic foundations of public education. <i>Education 203. Social Foundations of Education</i>	4
6. Role of the speech and hearing specialist in public education. <i>Education Speech 390C. Curriculum and Instructional Procedures and Materials Used in the Teaching of Speech and Hearing</i>	3
7. Specialized techniques and procedures related to speech and hearing problems in the public schools. <i>Education Speech 390C.</i>	
8. Relation of speech and hearing services to the total educational program. <i>Education Speech 390C.</i>	

65 specified units in the following concentration areas:		Units
1. Current principles, procedures, techniques, and instrumentation used in evaluating the speech, language, and hearing of children and adults.		
<i>Speech 167. Evaluative Procedures in Speech</i>	4	
<i>Speech 178. Identification Audiometry and Hearing Conservation</i>	4	
<i>Speech 275. Advanced Audiology</i>	5	
<i>Speech 278. Organic Disorders of Speech: Neurological</i>	3	
2. Disorders of speech, language and hearing: their classification, causes and manifestations.		
<i>Speech 172. Speech and Hearing Problems</i>	4	
<i>Speech 173A-B. Advanced Speech and Hearing</i>	6	
<i>Speech 175. Introduction to Audiology</i>	4	
3. Principles and remedial procedures used in habilitation and rehabilitation for those with various disorders of communication.		
<i>Speech 166. Principles of Behavior Modification</i>	4	
<i>Speech 168. Clinical Procedures: Speech and Hearing</i>	3	
<i>Speech 174. Communication for the Hard of Hearing</i>	4	
<i>Speech 274. Experimental Studies in Hearing</i>	4	
And one course selected from the following:		
<i>Speech 271. Stuttering</i>		
<i>Speech 273. Seminar in Articulation</i>		
<i>Speech 279. Disorders of Phonation</i>	3-4	
4. Relationships among speech, language and hearing problems with particular concern for the child or adult with multiple physical or mental handicaps.		
<i>Speech 277. Organic Disorders of Speech: Structural OR</i>		
<i>Speech 279. Disorders of Phonation</i>	3	
5. Organization and administration of programs designed to provide direct service to those with disorders of communication.		
<i>Education Speech 390C.</i>		
6. Services available from related fields for those with disorders of communication. (Several of the courses listed above contain instructional units bearing on this topic.)		
7. Theories of learning and behavior in their application to disorders of communication,		
<i>Speech 266. Behavior Modification in Speech Pathology</i>	3	
8. Effective use of information from related disciplines about the sensory, physical, emotional, social and intellectual status of a child or adult.		
<i>Linguistics 110A. Introduction to Syntax OR</i>		
<i>Linguistics 111A. Introduction to Phonology</i>	4	
<i>Psychology 127. Psychology of Language OR</i>		
<i>Psychology 103. Personality and Its Disorders</i>	4	
9. Principles and practices of counseling exceptional children and their parents.		
<i>Education 263A OR 263B. Counseling Techniques: Behavior Modification OR</i>		
<i>Education 264. Counseling Techniques: Electic OR</i>		
<i>Education 275. Counseling Theories: Seminar</i>	3	
		65-66
Clinical Practice and Student Teaching		
(1) One hundred eighty-five clock hours of clinical practice satisfied by <i>Speech 167</i> plus <i>Speech 191</i> and/or other class related practicum	3	
(2) Ninety clock hours of student teaching satisfied by <i>Education Speech 392B.</i> Student Teaching: <i>Speech and Hearing</i>	6	
		104-105

SPEECH

Lower Division Courses

10. Discussion and Dialog. (4) I, II.

Mr. Philipsen

Introduction to theories of communication, discussion, and dialog. Course emphasizes application of communication principles in directed experiences in discussion and dialog.

11. Fundamentals of Speech. (4) I, II, III.

Mr. Mulac

Introductory course, emphasizing current theories of communication, audience analysis, and persuasion. Preparation and presentation of speeches on topics of current concern. Conferences and videotape replay provides personalized assistance in the Tutorial Laboratory.

20. Introduction to Speech. (4) I, II.

Mr. Schoell

Orientation to the field of speech. Emphasis on the aspects of speech relevant to study in the speech and hearing major.

35. Critical Analysis of Speeches. (4) II.

Mr. Quimby

Introduction to the process of rhetorical criticism and the analysis of speech texts.

40. Radio and Television Broadcasting.

(4) I, II.

Mr. Quimby

History of the medium, governmental and social controls. This course will not help the student to qualify for an FCC license.

47. Argumentation and Debate. (4) I.

The Staff

Introduction to argumentation theory and drill in debate techniques. Class members may be required to participate in some intercollegiate forensic activities.

Upper Division Courses

112. Community Dialog. (4) III.

The Staff

Theoretical study of interpersonal, group and public speech communication followed by field application in local community through Campus Speaker's Bureau.

117. Language and Human Behavior. (4)

I.

Mr. Schoell

Discussion of theories which explain meaning in language by the way in which human beings behave toward words.

118. The Limits of Language.

119. Language and Metaphor.

129. Issues in Rhetorical Theory. (4) III.

Mr. Quimby

Critical survey of literature dealing with enduring issues such as the nature of rhetoric, its ethics, and its place in education and politics. Plato to Richards.

*Not to be given in 1973-74.

131. Advanced Public Speaking. (4) III.

Mr. Mulac

Theory and practice of oral communication as it applies to a wide range of situations. Theoretical constructs based upon current quantitative research provide criteria for evaluating communicational events. Students prepare and deliver a variety of speeches to audiences face-to-face as well as via closed circuit radio and television.

132A. Great Issue in American Public

Address. (4) II.

Mr. Schoell

A survey of significant issues and a study of the leading speakers who dealt with them.

132B. Great Issues in American Public

Address. (4) III.

Mr. Schoell

A rhetorical study in depth of the speaking of a period, or the speaking on a single issue, or the speaking of an individual.

*133A. British Public Address.

133B. British Public Address.

134. Contemporary Public Address. (4)

III.

Mr. Mills

An analytical study of the persuasive efforts of the leaders of major social, political, and religious reform movements since World War II.

136. Persuasion. (4) III.

Mr. Mulac

Prerequisite: Speech 11 or 101.

Analysis and synthesis of current persuasion theory as it has evolved through research in the behavioral sciences. Topics for study include: attention, motivation, set, materials of persuasion, stimulus manipulation and measurement or resultant behavior.

140. Introduction to Television. (4) III.

Mr. Quimby

Development of American educational and commercial television; current practices and problems.

141. Chamber Theater. (1-4)

142. Oral Interpretation of Literature.

(4) III.

Mr. Quimby

Principles and procedures for the analysis of literature as preparation for oral communication. Practice in oral presentations of several types of literature.

149A. Discussion Processes. (4) II.

Mr. Philipsen

Introduction to the literature on small groups, with particular attention to communication in the task-oriented discussion group. Intensive practice in participant observation and analysis of communication processes in small groups.

149B. Discussion and Conference Methods.

(4) III.

Mr. Philipsen

Introduction to the literature on the small conference as an innovation in communication, with particular attention to the use of the discussion group in conference activities. Supervised experiences in planning, executing, and evaluating group and conference experiences.

150. Phonetics. (4)

I Mr. Hanley

III Mr. Schoell

I for speech and hearing majors, III for all others. Description of the sounds of American speech and the use of the International Phonetic Alphabet to identify them. Historical trends in English phonology. Regional and foreign variations. Analysis of normal and deviate acoustic and physiological patterns of speech sound production.

155A. Speech Science: Acoustics. (3) I.

Mr. Gerber

Prerequisite: Physics 11.

Acoustic bases for an understanding of speech communication.

155B. Speech Science: Physiology. (3) III.

Mr. Hanley

Anatomical and physiological bases for an understanding of speech communication.

156. Reason in Controversy.**157. Intercollegiate Debate. (2-4) I, II.**

The Staff

Participation in intercollegiate debate. Maximum of 4 units in any quarter.

May be repeated for a maximum of 8 units.

158. Interpersonal Communication Theories. (4) I.

Mr. Philipsen

Prerequisite: Senior or graduate standing.

A critical review of major social science theories that contribute to an understanding of interpersonal communication, with special attention to theories of behavior exchange, symbolic interaction, and psychological balance.

159. Legal Argumentation. (4) II.

Mr. Mills

Forensic rhetoric is concerned with issues, evidence, kinds of arguments, and language in lawyers' pleadings and courts' opinions.

165. The Development of Language. (3) III.

Prerequisite: Senior standing. Ms. Costello

A study of theories of normal development of language, language measurement, and subsequent reference to deviations from the normal in terms of measurement and training.

166. Principles of Behavior Modification. (4) II.

Ms. Costello

Open to speech majors only.

Basic principles of behavior modification and their use in classroom, family, and clinical environments with special reference to speech pathology.

167. Evaluative Procedures in Speech. (4)

II.

Mr. Hanley

Prerequisites: Speech 150 and 172.

Review of normative research in speech and language development, vocal pitch, rate, and vocal quality. Consideration of examination procedures employed in speech retardation, misarticulation, voice disorders, cleft palate, cerebral palsy, stuttering, aphasia, mental retardation. Case work illustration.

168. Clinical Procedures: Speech and**Hearing. (3) III.**

Ms. Carmalt

Prerequisites: Speech 166 and 173A. (May be taken concurrently.)

Translation of the theoretical knowledge into practical diagnostic and remediation techniques. Intensive observation of advanced clinicians.

172. Speech and Hearing Problems. (4) I,

Ms. Costello

Open to speech majors only.

Study of the developmental sequence of normal speech and language acquisition. Also, study of the behaviors associated with various speech and language disorders and how they are affected by emotional, organic, and learning factors.

173A. Advanced Speech and Hearing.

(3) III.

Ms. Costello

Open to speech and hearing majors only.

Prerequisites: Speech 150, 172, and 166.

Advanced study of the normal development of speech and language and the various educational procedures available for children and adults with communication disorders such as articulation, stuttering, voice, and cerebral palsy.

173B. Advanced Speech and Hearing. (3) I

Ms. Prutting

Open to speech and hearing majors only.

Prerequisites: Speech 150, 172, 166, and 173A.

Study of the various educational procedures available for children and adults with communication disorders such as "delayed" language, childhood aphasia, adult acquired aphasia, and cleft palate.

174. Communication for the Hard of**Hearing. (4) III.**

Mr. Gerber

The re-coding of speech into visual, tactile, and other auditory means. Manual methods of communication, speechreading, auditory training, and problems of habilitation of the deaf. Instrumental aids for the deaf.

175. Introduction to Audiology. (4) II.

Mr. Gerber

Prerequisite: Speech 155A.

Anatomy and physiology of the hearing mechanism; diseases of the ear, including causes and types of deafness; otological considerations.

178. Identification Audiometry and Hearing**Conservation. (4) III.**

Mr. Gerber

Prerequisite: Speech 175.

Introduction to clinical audiometry; training and supervised practice in identification audiometry and interpretation of audiograms; administration of school audiometry.

180. Contemporary Rhetoric. (4) II.

Mr. Mills

Discussion of theoretical formulations of Richards, Weaver, Burke, McLuhan, and others, and the theory-building dimension of research in verbal communication.

181. Quantitative Methods in Speech**Research. (4) II.**

Mr. Mulac

The methodology for quantitative research in Speech. Computation of standard statistical procedures.

185. Cultural Patterns of Rhetorical

Communication. (4) III. Mr. Philipsen
Social and cultural influences in face-to-face communication processes. A sociolinguistic analysis of problems of diversity of speech use in contemporary America.

191. Clinical Practice: Speech and Hearing. (1-5) I, II, III. Ms. Carmalt

Prerequisite: Speech 166 and 168 and decision of faculty committee.

Observation and supervised application of remedial procedures in Speech and Hearing Center, cerebral palsy center, school for retardates, and hospital rehabilitation facility. May be repeated for maximum of 6 units, only 3 of which apply to California credential. Class size limited to assure appropriate supervision.

199. Independent Studies in Speech.

(1-5) I, II, III.

The Staff

Prerequisite: Open to seniors of proven scholastic ability by consent of chairman and instructor. 199 courses are limited to no more than 5 units in one quarter and no more than 12 units total.

Graduate Courses**200. Introduction to Graduate Study in****Speech. (3) I.**

Mr. Mills, The Staff

Open, with the permission of the departmental chairman, to qualified students who have completed the bachelor of arts degree.

Designed to acquaint the student with the procedures and disciplines essential for pursuing graduate work in the various areas of speech.

201. Introduction to Graduate Study in**Speech and Hearing. (3) I.**

The Staff

Open, with the permission of the departmental chairman, to qualified students who have completed the bachelor of arts degree.

Designed to acquaint the student with the procedures and disciplines essential for pursuing graduate work in speech and hearing science.

202. Seminar in College Speech Pedagogy.**(3) II.**

Mr. Mulac

Prerequisite: Permission of instructor.

Analysis of current research findings and practices related to teaching speech communication in college. Topics include goals of instruction in speech, learning theory, course assignments, feedback mechanisms, and quantification of speech in the classroom. Open only to Teaching Assistants in Department of Speech in second quarter of service.

204. Theory and Practice of Argumentation.**(4) II.**

Mr. Mills

Prerequisites: Speech 47, 156, or consent of instructor.

Theoretical study including descriptive and critical analysis of advocacy speeches and campaigns.

205. The Rhetoric of Dissent.**206. Quantitative Studies in Speech. (4) III.**

Mr. Mulac

Prerequisite: Speech 181 or consent of instructor. Current theories of speech communication which have evolved through quantitative research.

207. Seminar in Interpersonal Communication.**211. Experimental Design in Speech Research.****232. Public Address in Antiquity.****240A. Experimental Phonetics. (4) II.**

Mr. Hanley

Prerequisites: Speech 150 and 155A or consent of instructor.

Critical examination of theoretical and experimental foundations for current procedures in evaluation and description of vocal communication.

245. Experimental Studies in Speech.**(4) I.**

Ms. Prutting

Prerequisite: Consent of instructor.

The critical consideration of experiments in speech pathology with an introduction to experimental procedures.

261. Classical Rhetoric. (4) I. Mr. Quimby

Prerequisite: Speech 34 or consent of instructor.

Examination of rhetorical theory of ancient Greece and Rome.

262. Medieval and Renaissance Rhetoric.**263. Rhetorical Criticism.**

(See 595K. III. Mr. Mills)

266. Behavior Modification in Speech**Pathology. (3) II.**

Ms. Costello

Prerequisites: Speech 166, 168, or consent of instructor.

The advanced use of behavior modification procedures in clinical speech pathology and study of research design methodology. Case work included.

***271. Stuttering. (4) III.**

Ms. Costello

Prerequisite: Consent of instructor.

Historical and research backgrounds of stuttering. Theoretical considerations underlying rehabilitation procedures.

273. Seminar in Articulation. (4) III.

Ms. Costello

Prerequisite: Consent of instructor.

The detailed study of articulation in terms of precise measurement, testing procedures and therapeutic techniques. Recent research will be thoroughly studied and emphasis will be placed on development of experimental designs arising from seminar discussions.

274. Experimental Studies in Hearing. (4) I.

Mr. Gerber

Prerequisite: Consent of instructor.

The application of experimental methods to the study of auditory processes with special attention to speech perception. Laboratory requires conduct and reporting of experiment.

275. Pediatric Audiology. (4) II. Mr. Gerber

Prerequisite: Speech 178 or permission of instructor.

Developmental anatomy, physiology, and pathology.

* Not to be given 1973-74.

ogy of hearing. Screening and diagnostic audiometry for neonates, infants and children up to age 36 months. Genetics of hearing and deafness.

276. Theories of Hearing. (3) III. Mr. Gerber

Prerequisite: Speech 175 or Psychology 110B.
Historical review of auditory theories as they apply to man and animals through Helmholtz to Bekezy. Emphasis on current theories of cochlear and retrocochlear processes. Auditory signal detection.

277. Organic Disorders of Speech: Structural. (3) II. Mr. Hanley

Evaluation and management of speech disorders associated with cleft palate and other congenital or traumatic structural defects.

278. Organic Disorders of Speech:

Neurological. (3) III. Ms. Costello
Evaluation and management of speech and language disorders associated with acquired aphasia.

279. Disorders of Phonation. (3) I. Mr. Hanley

Detailed analysis of the human phonatory mechanism, normal function and dysfunction. Examination of theoretical models. Evaluation and management of dysphonias.

285. Seminar in History and Criticism of Rhetoric and Public Address.

286. Seminar in Quantitative Studies in Speech.

594AA-594ZZ. Special Topics. (1-4) I, II, III. The Staff

Prerequisite: Consent of Instructor.
Selected topics in accordance with instructors' specializations. Subject matter will be selected from same group as listed for 598 series. (May be repeated with a different topic for a maximum of 9 units.)

595AA-595ZZ. Group Studies (3) I, II, III.

Prerequisite: Consent of Instructor. The Staff
Critical review of research organized on a topic

basis in accordance with instructors' specializations. Subject matter will be selected from same group as listed for 598 series. (May be repeated with a different topic for a maximum of 9 units.)

596AA-596ZZ. Directed Reading and Research. (2-4) I, II, III. The Staff

Prerequisite: Consent of Instructor.
Individual tutorial. A written proposal must be approved by the department chairman and filed with the Graduate Division. Subject matter will be selected from same group as listed for 598 series. (May be repeated for a maximum of 10 units.)

598AA-598ZZ. Master's Thesis and Research Preparation. (1-6) I, II, III. The Staff

The thesis work is done under the direction of the chairman of a student's thesis committee.

Related Courses in Another Department

Education SP 390. Curriculum and Instructional Procedures and Materials Used in the Teaching of Speech. (3) I.

Prerequisite: consent of instructor. Mr. Schoell

Education SP 390C. Curriculum and Instructional Procedures and Materials Used in the Teaching of Speech and Hearing.

(3) I. Ms. Carmalt
Prerequisites: Speech 175, 166 or 167 and 191.
Remedial methods for the speech and hearing handicapped in the public schools. Laboratory required. Required for state credential candidates.

Education SP 392A. Student Teaching: Speech. (3-6) I, II, III. Mr. Schoell

Education SP 392B. Student Teaching: Speech and Hearing. (3-6) I.

Ms. Carmalt
Prerequisite: Speech 191, Educ. SP 390C, completion of one graduate year, and decision of faculty committee.

Students must complete a total of 90 clock hours of actual teaching exclusive of observation.

SUBJECT A

Jean E. Heywood, M.A., *Instruction Supervisor of Subject A.*
William S. Meyers, M.A., *Associate, English as a Second Language.*
Richard J. Panofsky, M.A., *Associate in Subject A.*
Eleanor A. Thompson, M.A., *Lecturer in Subject A.*
Laurel M. Walker, M.A., *Associate in Subject A.*

REGULATIONS

For regulations governing the Subject A requirement, see section in Catalog. Fee \$45.

Subject A. English Composition (no credit).

I, II, III. The Staff
Four hours weekly for one quarter. This course offers training in the study of English composition through a descriptive study of the English language with emphasis on usage, rhetoric, and style. Weekly compositions and other assignments enable students to develop writing skills.

Satisfaction of the Subject A requirement is prerequisite to enrollment in English 1A.

English as a Second Language 1A.

(5) I, II, III. Mr. Myers
Prerequisite: Qualifying score on English Language Examination. Conversational and written English for foreign students.

English as a Second Language 1B.

(4) I, II, III.

Mr. Myers

Prerequisite: Qualifying score on English Language Placement Examination. Advanced speaking and listening of English for foreign students.

This course is designed to help students develop natural speech patterns in English through prepared presentations, extemporaneous speaking, seminar approaches to discussion and general question and response practice in everyday conversation.

English as a Second Language 1C.

(4) I, II, III.

Mr. Myers

Prerequisite: Qualifying score on the English Language Placement Examination. Advanced reading and writing of English for foreign students.

This course is designed to make students more fully aware of the variety of styles and levels of usage in written English, to improve their vocabulary skills, and to develop their ability to write good prose. Through reading and writing analytical prose, students are exposed to the kind of English essential to university level writing.

TUTORIAL PROGRAM**Committee in Charge**

Walter Capps, Ph.D., *Associate Professor of Religious Studies.*

Daniel Hone, Ph.D., *Associate Professor of Physics.*

Patrizio Rossi, Ph.D., *Assistant Professor of Italian (Chairman).*

Lawrence Willson, Ph.D., *Professor of English.*

The purpose of the Tutorial Program is to offer a broad education in the liberal arts through an interdepartmental curriculum which allows the design of individual courses of study. The Tutorial Program emphasizes rigorous training in the arts of critical reading, discussion, and writing. The student in every Tutorial course (except Tutorial 1, where the requirement may be less) is required to present a minimum of 1,000 words of writing each week.

The province of the Tutorial Program is the study of interdisciplinary topics in the liberal arts. In the lower division, Tutorial 1, an introduction to tutorial methods, is offered in several seminars, which deal with various subjects. This course, not required, is open to freshmen. The Colloquia are electives for all upper division students. Tutorial 100 courses are open to all upper division students (although not in the departments of their majors) on the recommendation of the chairmen of the departments in which they are majoring.

THE TUTORIAL MAJOR

Eight units of Colloquia and thirty-six units of Tutorial 100 are required.

Tutorial

All enrollment in Tutorial courses is subject to the approval of the instructor.

Lower Division Course**1. Introduction to Tutorial. (1-3) I, II, III.**

The Staff

Readings and essay-writing designed to acquaint new or prospective Tutorial majors with the nature and methods of the Tutorial Program. **Freshmen.**

Upper Division Courses**Colloquium. (4) I, II, III.**

The Staff

Formal discussion group with readings and essay-

writing. Conducted by two instructors from different departments of knowledge.

Tutorial**100. (4) I, II, III.**

The Staff

Prerequisite: 8 units of Colloquia.

May be repeated for credit up to 36 units.

Tutors to be selected from the faculty according to the interests and requirements of the students.

199. Independent Studies (1-4) I, II, III.

The Staff

Prerequisites: Departmental Approval.

Independent studies to enhance the student's background for his Tutorial theme.

The University of California

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* George H. Link and Edward A. Morris are Regents Designate (non-voting).

** The names are arranged in order of original accession to the Board of Regents. The term of office of appointed Regents is sixteen years, with terms expiring on March 1 of the year indicated.

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Paul Mossett, *Associate Director, Educational Opportunity Program*

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Ira Weinstein

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Mrs. Lucy Harlan

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E. L. Chalberg

Housing Supervisor

Joan F. Mortell

Public Information Manager

E. George Obern

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Clayton Wilson, *Associate Dean*

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Max L. Weiss, *Associate Provost*

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Ray E. Hosford, *Associate Dean*

Graduate Division

Robert O. Collins, *Dean*

Henry W. Offen, *Associate Dean*

University Extension

George H. Daigneault, *Dean*

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